THE ARCHITECT & BUILDING NEWS

12 JULY 1956 : VOL 210 : NO. 2 : ONE SHILLING WEEKLY

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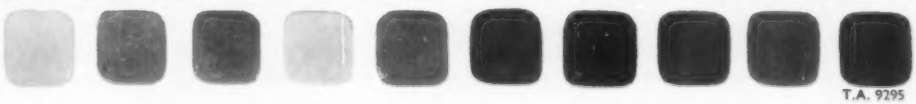

T.A. 9295

A

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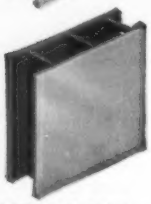
for colour, finish, durability



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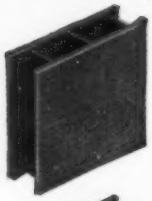

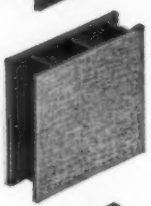

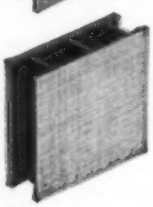

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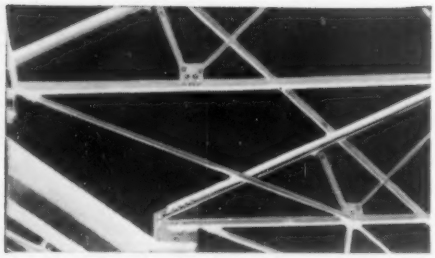

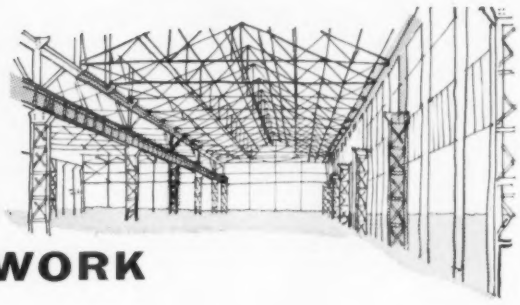

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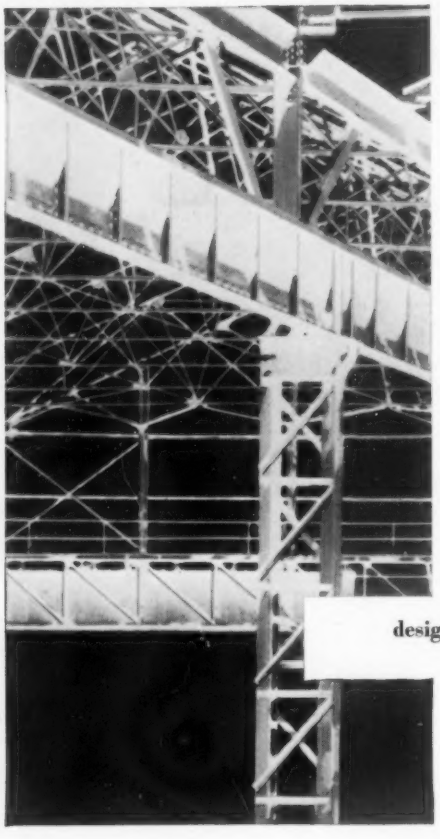

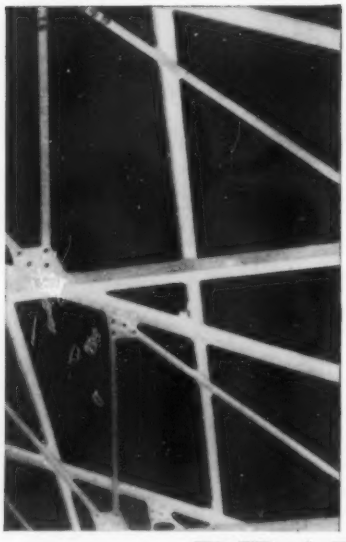

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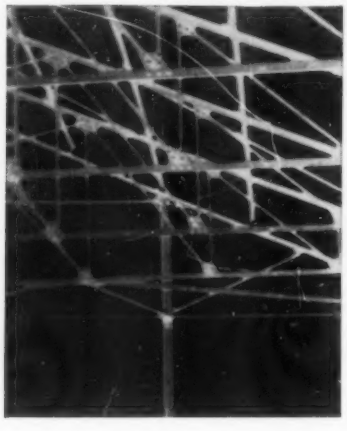

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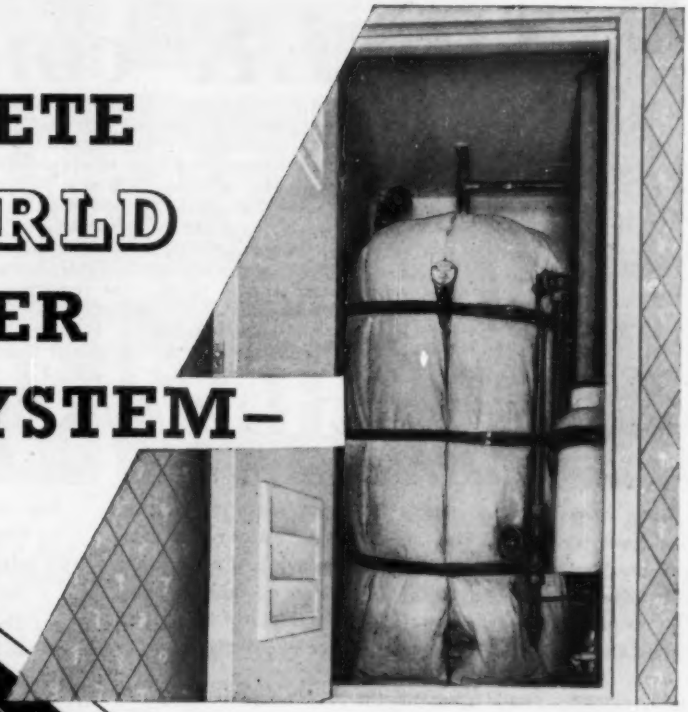

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B

ABNER comment

"Curtain walling of one sort or another being all the rage, I note that some expensive lessons are being learned. Within quite a short radius of this office there are several buildings where coloured glass in some form is being used for the panel in-filling. On one building a great many sheets have cracked right across. It would be interesting to know why. My guess is that insufficient allowance was made for the additional expansion of coloured glass. By this I mean that coloured glass in absorbing more heat than clear glass will expand more and therefore needs more room. I am glad that I shall not have to settle who is to pay for replacing the damaged panels. At the same time I hope that the designers of the other buildings will not be faced with the same trouble. It is a great pity that for the general good more publicity is not given to failures of materials and their causes."

THE ANSWER

Glass rarely breaks, once it has been fixed, through an inherent weakness. The overwhelming majority of cases of breakage *in situ* examined have been traced back either to edges having been damaged before or during fixing, or to pinching. Of the two causes of fractures mentioned, tight fixing is by far the greater source of trouble.

Clearances should cater for the need to allow the panels to enter the frames easily; for expansion differentials between glass and frame; for the provision of thermal barriers between the edges of the glass and the framework when the latter is of metal; for the cushioning of minor twists in the framework so that they shall not be carried over into the glass; and for the deflections caused, particularly in large panels, by high wind pressure.

The use of large coloured glass slabs has brought us up against the unexpected but now rather obvious phenomenon of the stressed edge. Glass, being a poor conductor of heat, will show an uneven distribution of temperature if it is only partly exposed to the sun or other radiant heat source. The temperature gradients so formed will become steeper as the colour is deepened. Owing to the time-lag before an equilibrium is reached, the immediate effect of the heating up by direct sunshine of the exposed portion of a coloured glass panel is to place the edges under tension, and, unless those edges are in good condition, they may yield at their weakest points. Cracks will then form, which as a rule will develop slowly in the early stages but may well finish with a loud report. It may take days or even weeks before a small fissure along the edge develops into a visible crack. Wired glass is particularly vulnerable.

The clearances to be allowed fall under two heads:

(a) The perimeter clearances, as between the edge of the glass and that part of the frame which is known as the glazing platform.

(b) The front and back clearances, as between the face of the glazing unit and the front fixing bead or angle on one hand, and on the other hand as between the back of the glazing unit and the backstop.

Of the front and back clearances the front is the more important, because it is in the outer or outermost leaf of the assembly that such radiant heat of the sun will be arrested as reaches the particular elevation. If the edges of a heated glass plate are chilled through direct contact with a metal frame, there is a considerable risk of small fissures developing at the point of contact, and that these fissures will, due to other causes, such as vibration, develop into cracks. The back clearance is, however, not without importance, because it is the combination of the two clearances, that is to say front and back, which make it possible to avoid the transference from framework to glass of the minor twists in the general structure which occur through temperature changes. While glass plates will accept a considerable amount of bowing they are very vulnerable to twist.

A pamphlet containing specific recommendations applicable to the glazing of structural insulating glasses to steel, aluminium, timber and reinforced concrete is now in the hands of the printer. Nine types of fixing detail are illustrated and examined. The choice of glazing or jointing compounds is discussed. Copies will gladly be sent on application to:—

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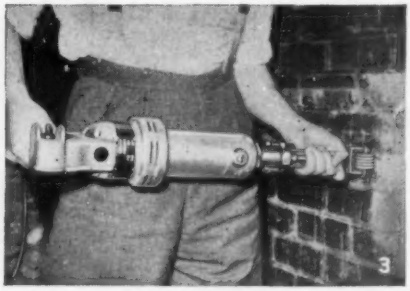

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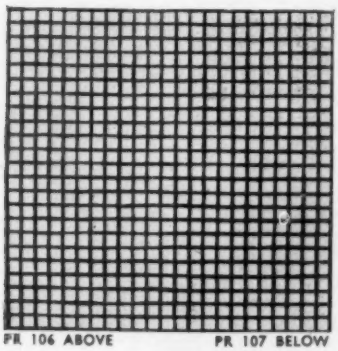

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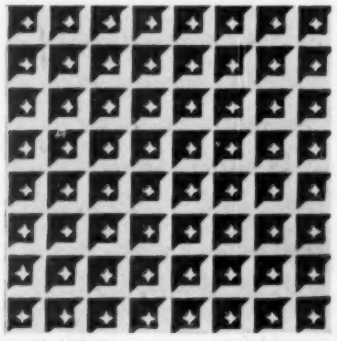

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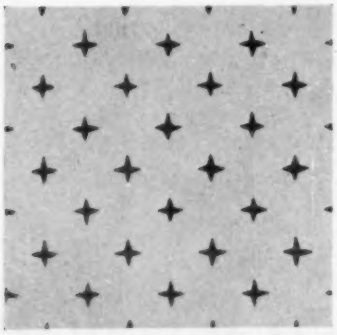

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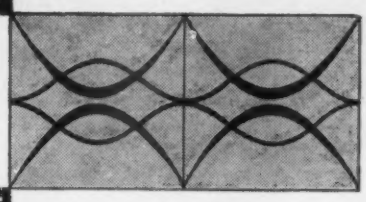

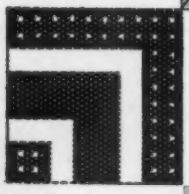

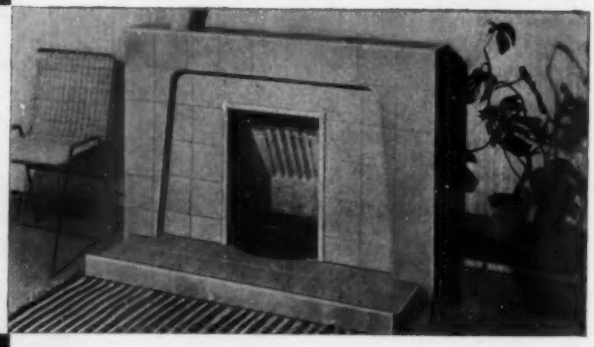

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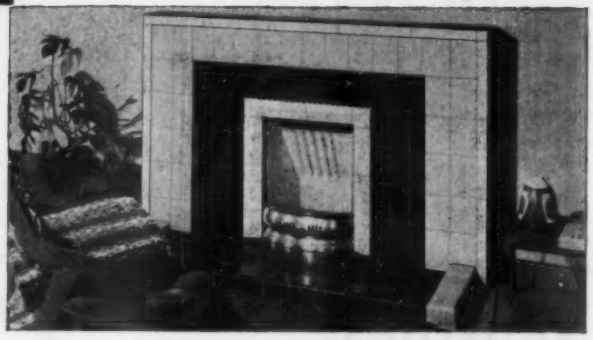

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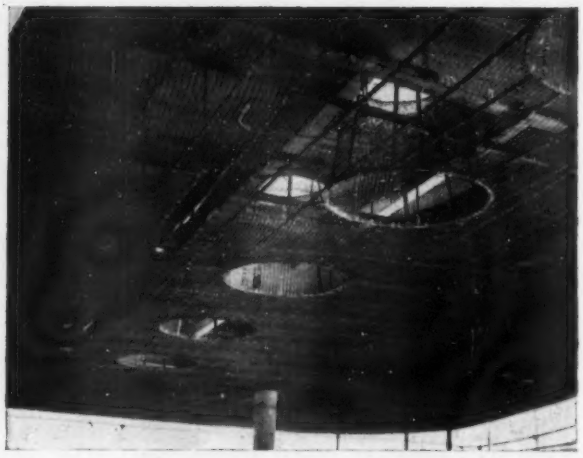

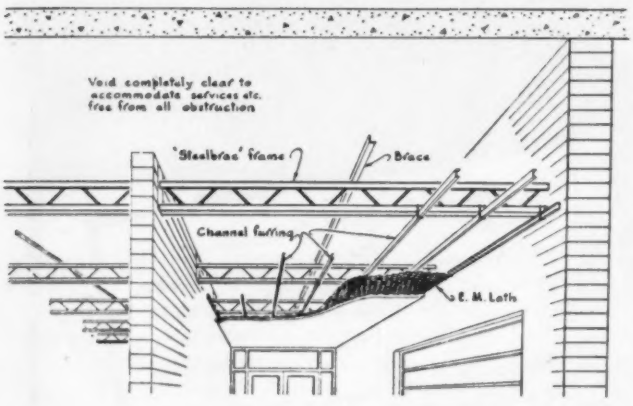

This type of ceiling commends itself to the Architect in many other ways. The void between the ceiling and floor above leaves ample room for the provision of services and acts as a natural barrier to noise. Steelbrac framing and lathing provides a uniform key that is particularly suitable for the erection of barrel or vaulted ceilings at an economic cost. Descriptive literature will gladly be sent on request.

Illustrations:
Above—Steelbrac lathing ready to receive plaster.
Left—Details of construction showing void for services.

STEEL BRACKETING & LATHING LTD.

SUSPENDED CEILING SPECIALISTS

3/8, BRIGSTOCK PARADE, THORNTON HEATH, SURREY

Telephone: Thornton Heath 5601

Part of specialised production of coils for refrigerators.

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Copper Tubing has hundreds of vital functions in thousands of modern homes. A great deal of it comes from Wednesbury. And because of the care and skill lavished on it in the making, it withstands equally both years of neglect and the loving attacks of the handyman. So, whenever there's a need for Domestic Copper Tubing produced to British Standard Specifications, it pays to buy or specify the best and . . .

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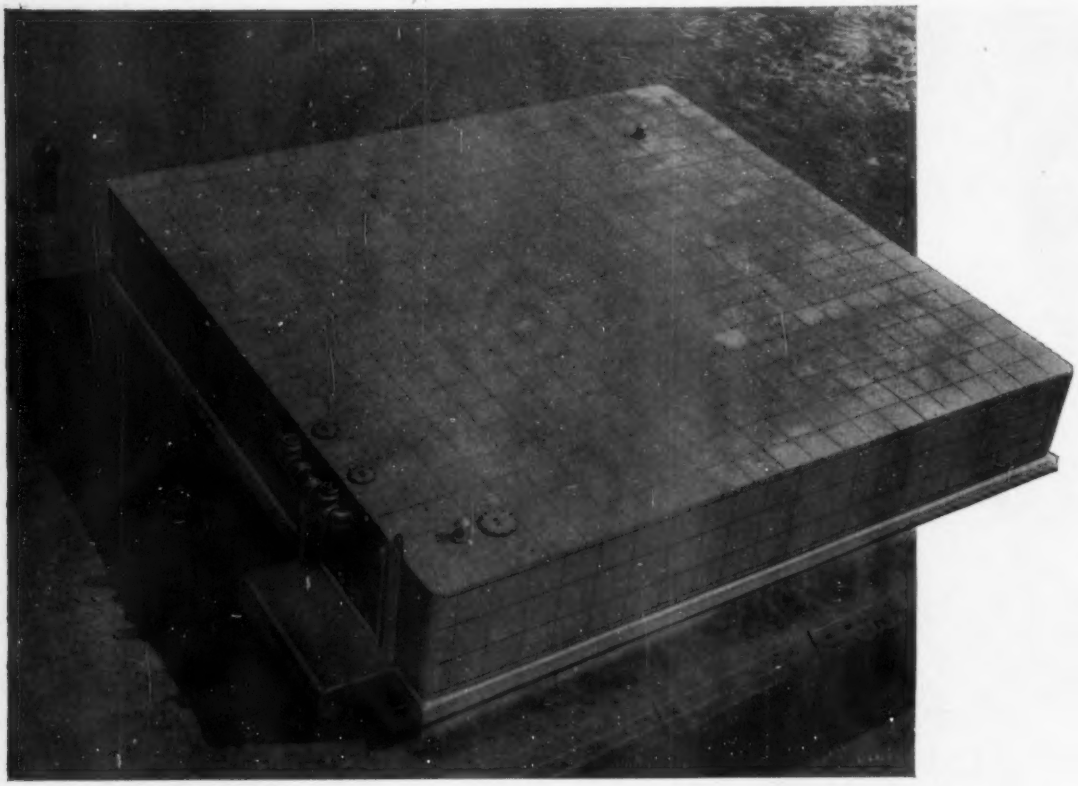

CAST IRON
Storage tanks

TO COMPLY WITH B.S. 1563 : 1949
BUILT FROM STANDARD PLATES WITH EITHER INSIDE OR OUTSIDE FLANGES.

★ The illustration shows a Mather & Platt 66,150 gallon cast-iron tank with cast-iron plate cover at a Glasgow foundry.

Mather & Platt
LIMITED

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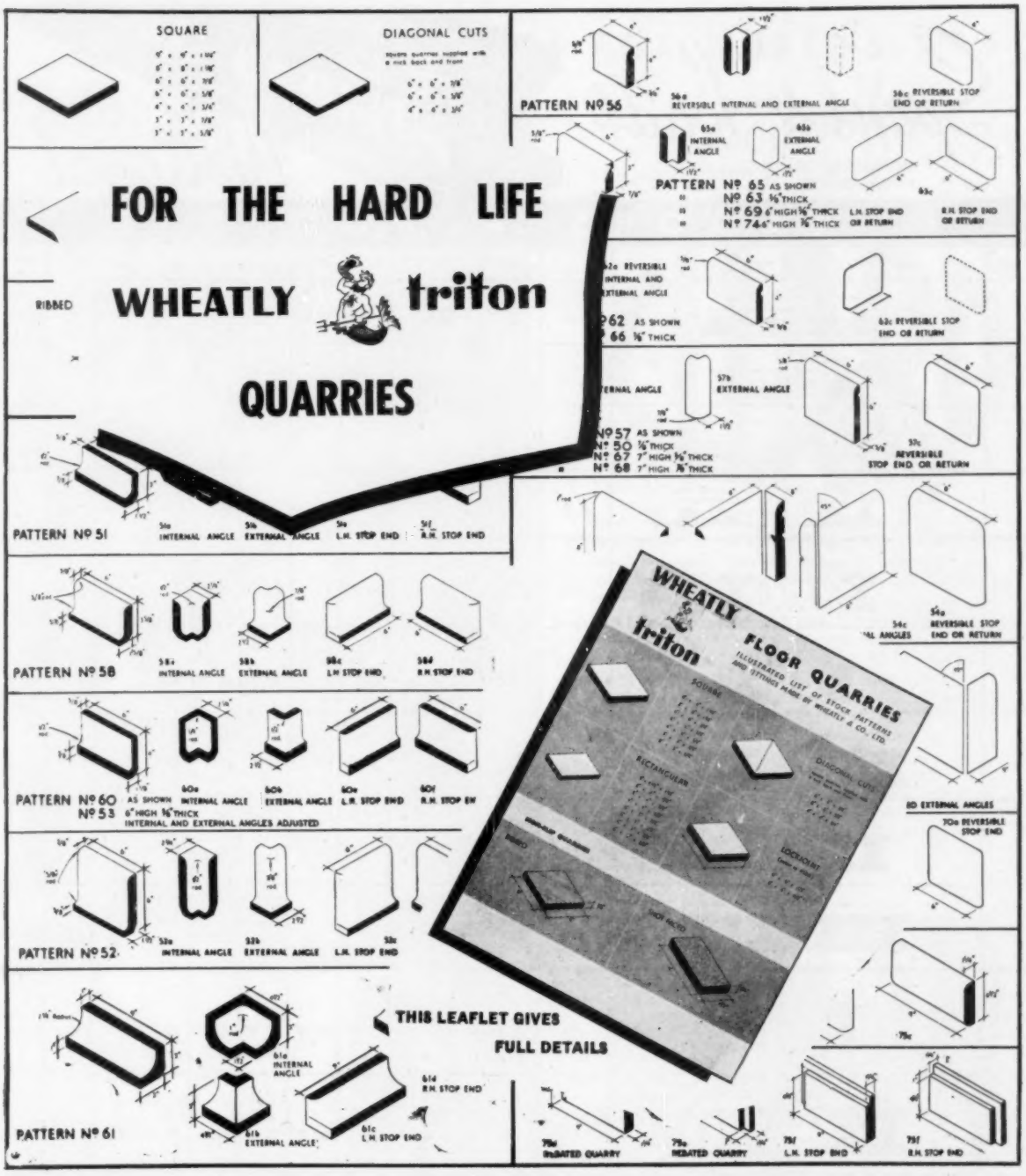
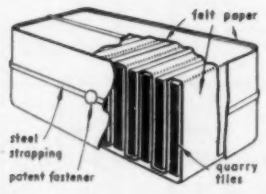




Wheatly Triton Floor Quarries are particularly suitable for flooring which is subject to heavy wear. They have been used extensively in many overseas markets for a wide variety of purposes, including schools, domestic uses, factories, etc.

EXPORT Our special Floor Quarry pack generally ensures their safe arrival overseas. Special consideration will be given to other forms of pack if required. The quarries are packed in bundles of about 20, with a strip of feltpaper passed concertina fashion between the quarries, and then around the outside of the bundle. Steel strapping is then passed round the length of the bundle, and secured by a patent fastener.

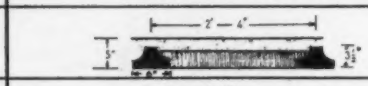
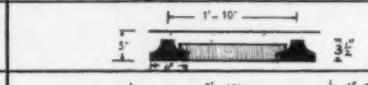
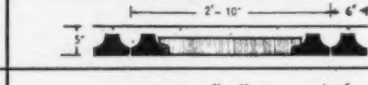
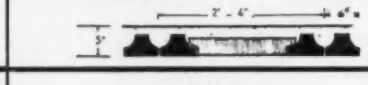
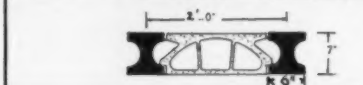
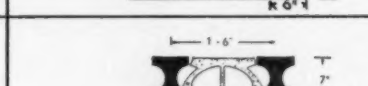
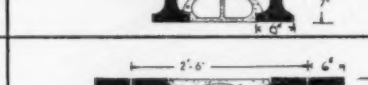
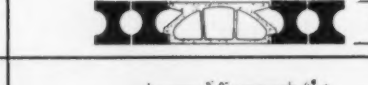
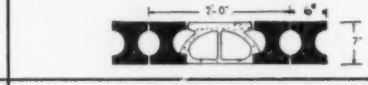
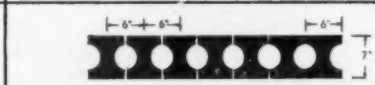
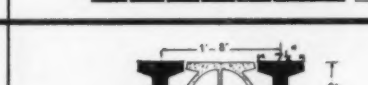
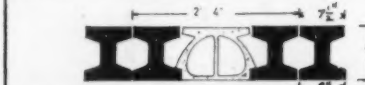
WHEATLY AND COMPANY LIMITED SPRINGFIELD TILERIES, TRENT VALE, STOKE-ON-TRENT, ENGLAND

WH 75

Spans & Loads

BROCHURE AND FULL TABLES FORWARDED ON REQUEST

FLOORS & ROOFS

Depth	TYPICAL CROSS SECTIONS	Self Wt. per sq.ft.	Type	Superimp'd load lb./ft.²	30 lb.	40 lb.	50 lb.	60 lb.	80 lb.	100 lb	150 lb.	200 lb.
5"		36 lb	C5 Incl. 2" Structural Screed on 3" Wood Wool Slab	Case 1	12'6"	12'0"	11'6"	11'3"	10'3"	10'0"	—	—
5"		38 lb.		Case 2	13'9"	13'6"	13'0"	12'6"	11'9"	11'0"	—	—
5"		40 lb		Case 3	—	—	—	13'9"	13'0"	12'3"	—	—
5"		42 lb		Case 4	—	—	—	—	—	13'0"	—	—
7"		35 lb	X7	Case 1	20'6"	19'6"	18'8"	17'9"	16'5"	15'3"	13'3"	11'11"
7"		36 lb.	do.	Case 2	23'8"	22'5"	21'8"	20'5"	18'11"	17'8"	15'4"	13'9"
7"		40 lb.	do	Case 3	25'5"	24'1"	23'1"	22'1"	20'6"	19'2"	16'9"	15'0"
7"		42 lb.	do.	Case 4	—	26'9"	25'7"	24'6"	22'9"	21'4"	18'8"	16'9"
7"		60 lb	do	Case 5	—	—	—	—	—	—	25'5"	23'0"
9"		47 lb	X9	Case 1	30'5"	28'10"	27'10"	26'6"	24'9"	23'2"	20'4"	18'4"
9"		53 lb.	do.	Case 2	35'4"	33'8"	32'4"	31'0"	29'1"	27'3"	24'5"	21'8"
10"		55 lb	I10	Case 1	36'9"	35'2"	33'10"	32'7"	30'5"	28'8"	25'2"	23'0"
10"		60 lb.	do.	Case 2	41'6"	39'10"	38'4"	37'0"	34'8"	32'10"	29'0"	26'4"

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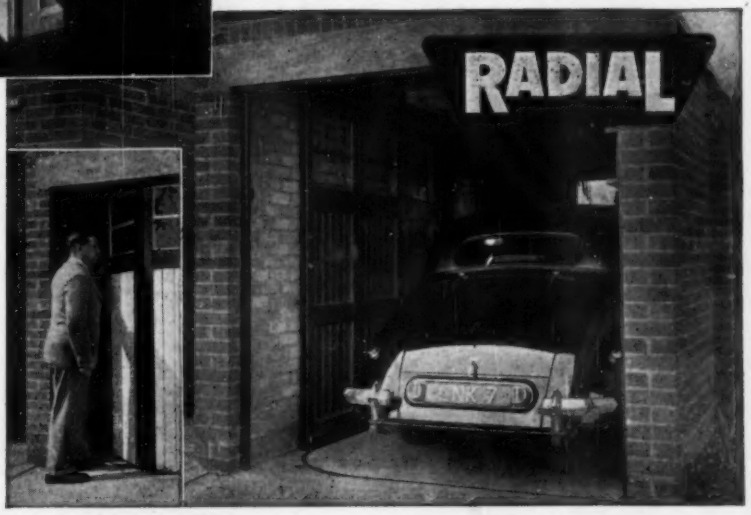
SLIDING DOOR GEAR

FOR THE WORLD'S BEST

Specify

ELLARD

Much valuable space can be secured by the appropriate use of sliding doors in the modern dwelling house. The busy housewife will find her work considerably reduced by having easy access from room to room, as can be seen by the illustration at left. The awkward manœuvring when "getting around" with cleaning equipment, or at meal times, is entirely removed by the use of sliding doors. In addition, free and complete ventilation of all rooms can be quickly obtained giving a general feeling of light and airiness at all times. There are other advantages which will readily occur to discriminating architects. The all-round efficiency of sliding doors can only be maintained by using first-class door gear. Specify ELLARD "Estate" Sliding Door Gear—it is the best of its kind, competitive in price, smooth and trouble-free in action. ELLARD Door Gear is used on most large housing estates.



Easy access to and from the garage, and unobstructed working space, are valuable assets to the motorist. The illustration at right shows a typical example of ELLARD "Radial" Sliding Door Gear as supplied to numerous private and housing estate garages throughout the country. ELLARD "Estate" and "Radial" Sliding Door Gears can be readily obtained from your nearest ironmonger or merchant.

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THE WORLD
MEMBER OF THE
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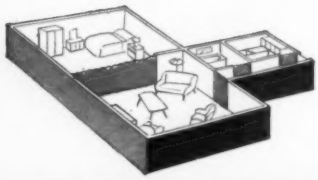
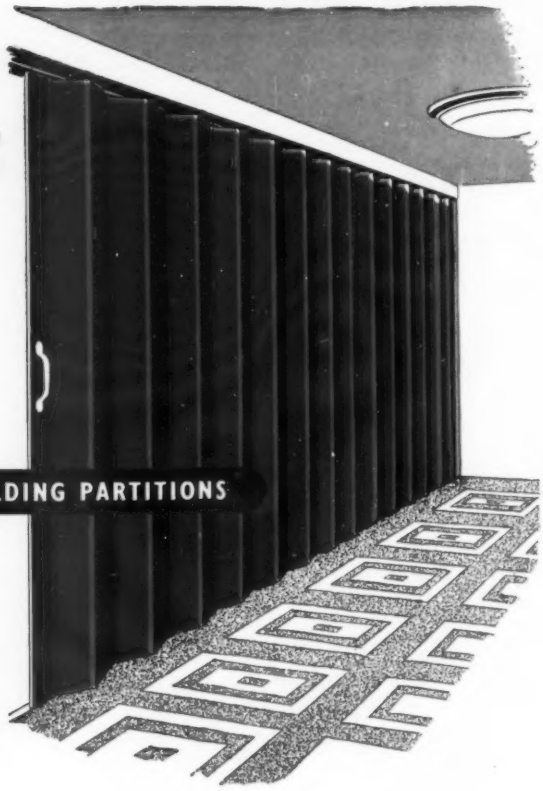
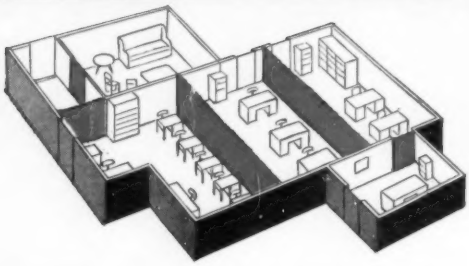




WITH BOLTON LEATHERCLOTH COVERED FOLDING PARTITIONS



The above photographs show a typical application of Bolton "Superfold" collapsible partitions in a modern school.

The Bolton 'Superfold' collapsible partition, Leathercloth-covered, is the complete answer to the present-day problem of using limited space to the best advantage. Light and easy to handle, the 'Superfold' partition consists of a sturdy collapsible metal frame finished on both sides with an attractive washable Leathercloth covering, available in a variety of shades. The flexibility of 'Superfold' movable walls transforms rooms into apartments and classrooms into assembly halls, and the sub-division of offices, hospital wards, department stores, dining halls, clubs, hotel rooms and restaurants—to name but a few applications—can be accomplished in a matter of seconds.

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Photo: Bowls Pavilion, Bexhill-on-Sea. Architect: Kenneth G. Higgs, A.R.I.B.A., Bexhill-on-Sea.

The illustration shows just one of the countless applications of Coseley Buildings. Designed in clear spans of from 30 feet to 75 feet with eaves heights of from 8 feet to 20 feet, there is an answer to any problem of accommodation within this range, which is readily and economically available.

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Woolland Bros. Ltd. Store at Knightsbridge.
Photo: Courtesy of Michael Brashier, Esq., Dip. Arch., A.R.I.B.A.

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If customers cannot make their wishes understood in a store without having to raise their voices, they will patronise another. And the quiet store when they find it will probably be sound-conditioned with Acousti-Celotex. For Acousti-Celotex Tiles have been found the most efficient sound absorbing material all over the world. They absorb sharp sounds which are such a strain on customers and staff and reduce noise to a comfortable level. They increase staff efficiency *and that means more sales.* They are easily and economically installed, require no maintenance and can be repeatedly repainted without impairing their effect. Consult your regional Acousti-Celotex distributor for full details.

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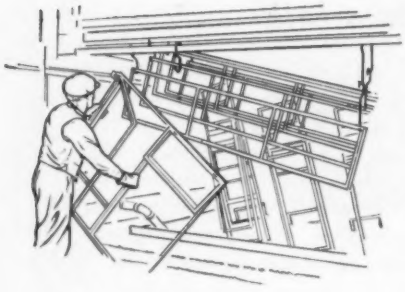
Here's the inside story of the THOMPSON RUSTPROOFING PROCESS

FIRST we shot-blast at 80 lbs. p.s.i.

For steel windows everyone knows that the best protection against rust is a generous coating of zinc. But zinc won't adhere to steel unless its surface is properly prepared. That's why we shot-blast every Beacon Window to ensure a meticulously clean and slightly pitted surface entirely free from scale, grease and dirt, on which the zinc can be deposited to give life-long protection against Rust and Corrosion.

..THEN we coat with Zinc (99·5% pure)

There are several methods of coating steel with zinc to give it the maximum protection against rust and corrosion. As engineers of world-wide experience, Thompson's use every process, but the one chosen for Beacon Windows — the Zinc Wire Metallisation Process — has special advantages. Under the flame of the oxy-propane flame gun the whole window receives a generous coating of zinc—not less than ·004" thick—as an *integral* unit after assembly.



..FINALLY the surface is sealed

Thompson's are not content to stop at the zinc coating stage. Every Beacon Window is passed through a zinc chromate primer tank and stoved at a temperature of 400°F. This protects against attack from any dissimilar metallic-based finishing paints. It also safeguards against corrosion when stacking on unsuitable ground, prior to use. But, more important, the priming coat being factory-controlled, its quality, density and workmanship can be guaranteed.

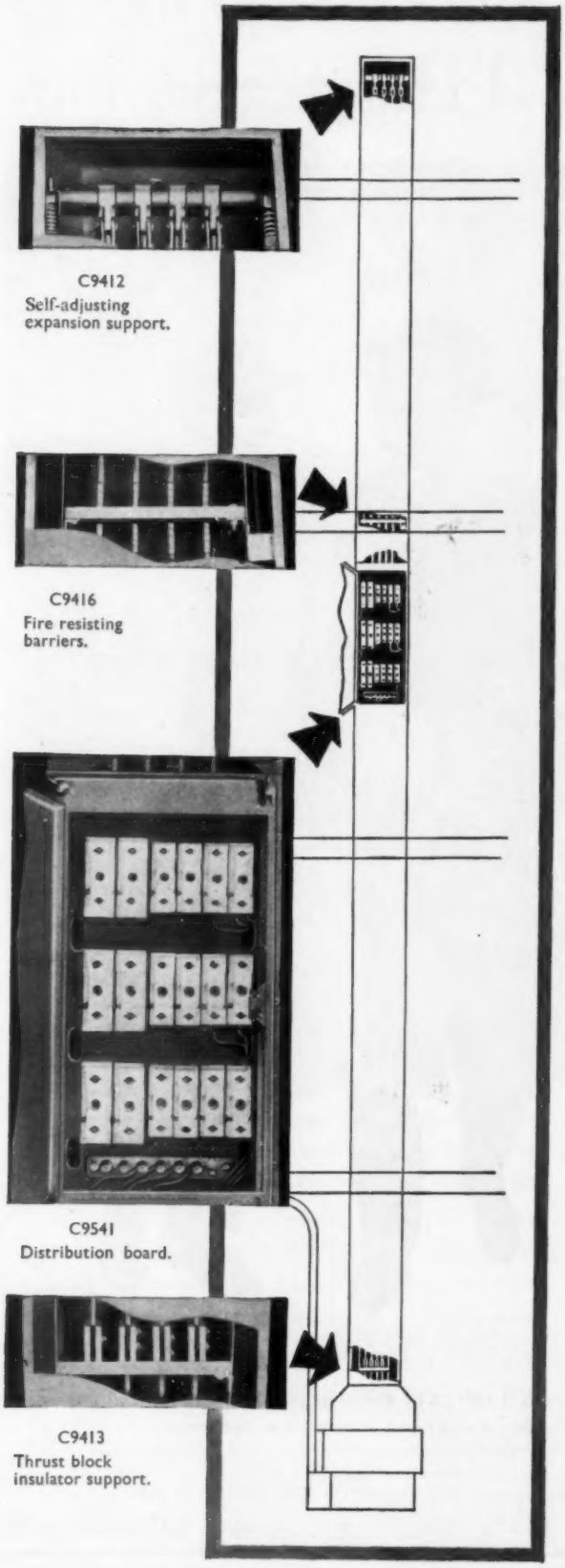
-the result is perfect RUSTPROOFING

There's a quality touch about a Beacon Window characteristic of a product made under the strictest engineering supervision. A Beacon Window always opens and closes smoothly — it fits accurately on all four sides to exclude all draughts. Its bronze furniture is sensibly robust. But, the really important fact — and something which is quite invisible — is that it has been rustproofed to satisfy the most exacting conditions to which steel windows can be subjected. Every Beacon Metal Window, you can be sure, will pass with flying colours all the tests described in B.S.729. There are no better windows made.

BEACON
METAL WINDOWS

Member of the Metal Window Association

JOHN THOMPSON
BEACON WINDOWS LTD
WOLVERHAMPTON



FLEXIBILITY OF SERVICE . . .

The ideal rising main for all modern multi-storied buildings is the G.E.C. Double-Duct System which gives complete flexibility of service with full facilities for load balancing and, at the same time, enabling any modifications to be made to suit individual requirements. Some of the salient features are as follows :—

- Built-in channel ways on either side of bars are provided to accommodate sub-circuit cables.
- Special distribution boards are supplied, either detachable or permanently connected in accordance with the customer's wishes.
- Distribution board unit positions are an integral part of the rising main, being positioned where required, allowing sub-circuit cables to be taken via the channel ways in an upward or downward direction. Thus one distribution board may serve two or three floors if necessary.
- The distribution boards may serve as the Supply Authority's cut-outs if independent flats or offices are separately metered. The distribution board can act as a local distributor when rising mains are metered at supply intake.
- All distribution board covers may be sealed and can be fed from any one phase as required, thus facilitating load balancing.
- Boards can be arranged for either double pole, single pole and neutral, triple pole, or triple pole and neutral systems as required.

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G.E.C.

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Your clients will be quick to grasp the advantages of having plenty of really hot water *instantly* available all the year round and at any time of the day or night. In summer, a boiler system can prove an expensive nuisance; a National in the kitchen does away with the need for fires when the weather's warm and ensures that there's *always* plenty of hot water on tap for early morning shaves, quick cups of tea and a thousand other things.

The high-quality and perfect finish of the National ensure trouble-free performance throughout its long life; the architect who specifies or recommends it can rest assured of the future comfort of his clients.

THE FLAVEL NATIONAL INSTANTANEOUS SINK GAS WATER HEATER

- ★ Provides a full half-gallon of piping hot water every minute.
- ★ A broken feed type heater, with all working parts totally enclosed. Designed for wall fixing, it works equally well on both hard and soft water.
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- ★ The removal of a single knurled nut enables the heat exchanger to be unhooked and cleaned in less than five minutes by the consumer.
- ★ 12 Bray burner jets require no maintenance in normal use. Rating: 35,000 B.Th.U/hr. Connections: gas ½" B.S.P.; water ½" B.S.P.
- ★ Height 25½", width 8½", depth 7¾", weight 20½ lbs. 6" spout supplied as standard, but 9" 12" or 18" spouts are available.

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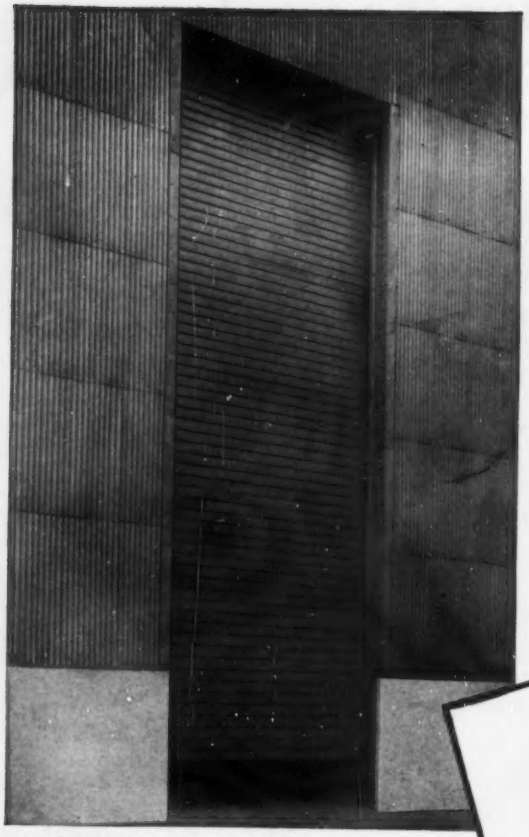

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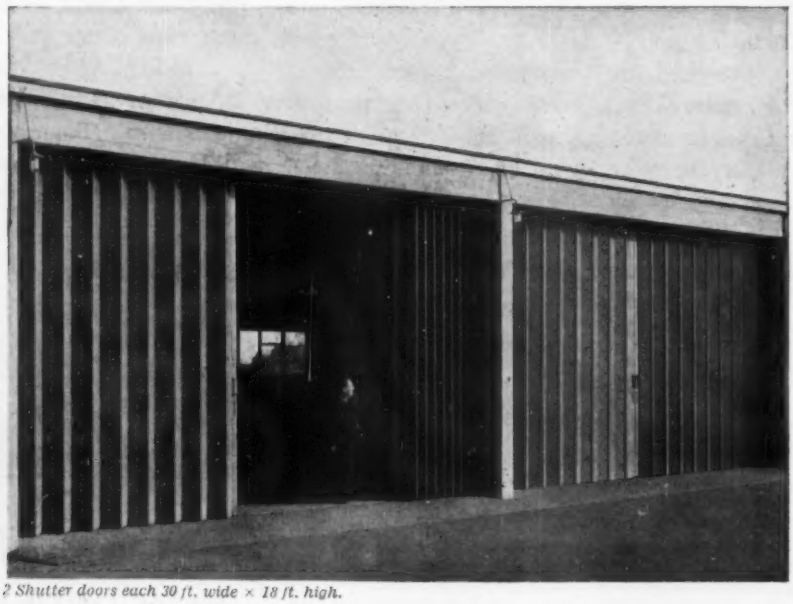

2 Shutter doors each 30 ft. wide × 18 ft. high.

Full information including working clearances and fixing details supplied upon request.

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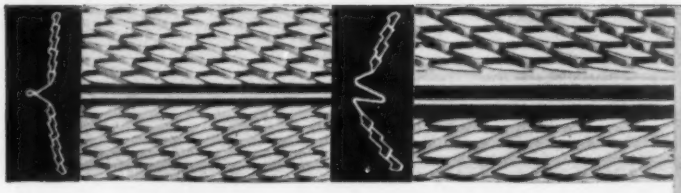
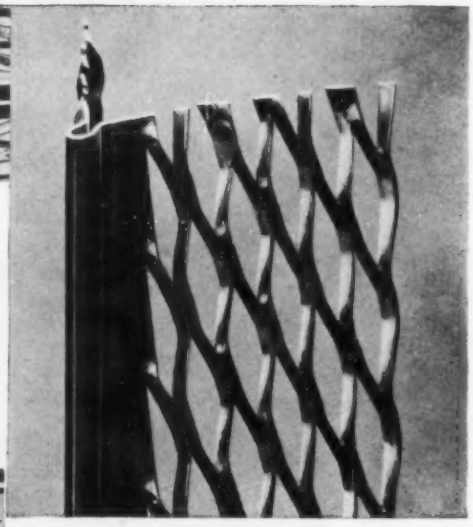


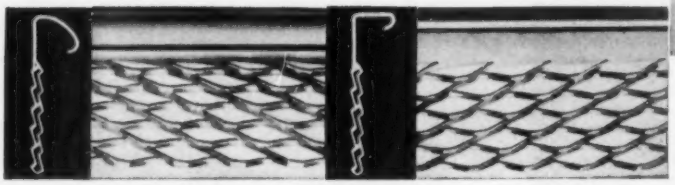
SCREED BEAD

Gives a perfect division between different types of plasterwork. Simple to fix. Made from tight coat galvanised steel in standard lengths of 10 ft or less as required.

CONCEALED PICTURE RAIL

Quickly put up by a plasterer at the height of a picture rail, leaving a slot round the wall for the insertion of picture hooks. In standard lengths of 10 ft or less as required.





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Eliminates timber trims architraves for door and window opening, recesses, etc. Is cheaper than timber, less expensive to erect, does not warp or swell, gives perfect finish for plaster. In standard lengths of 7, 8, 9 and 10 ft or less as required.

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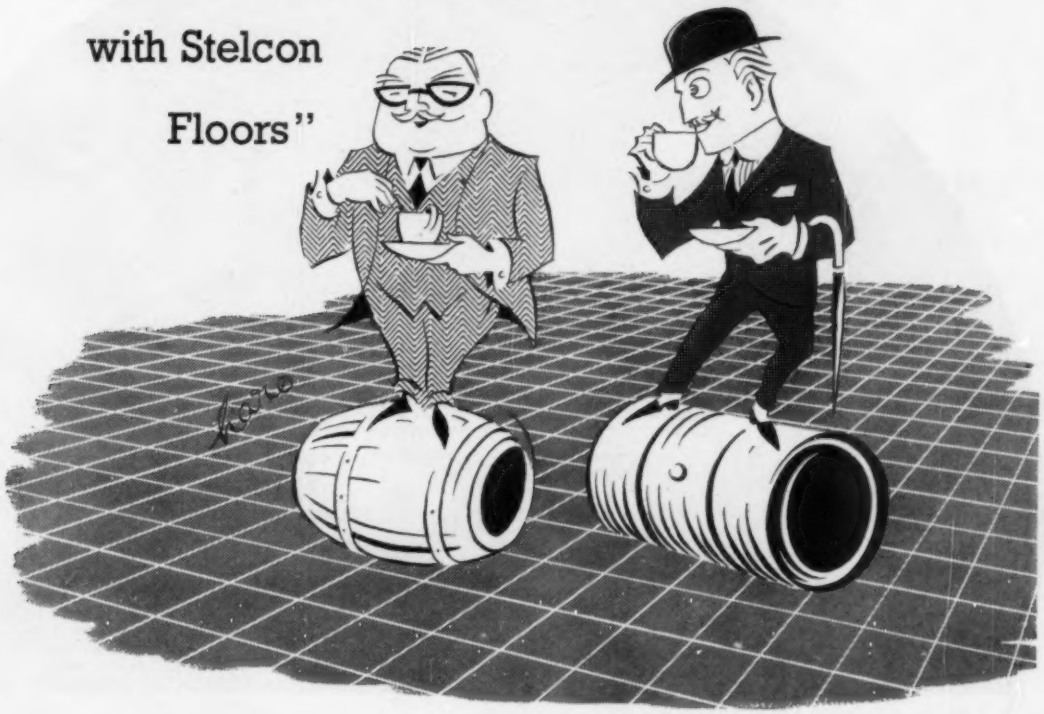

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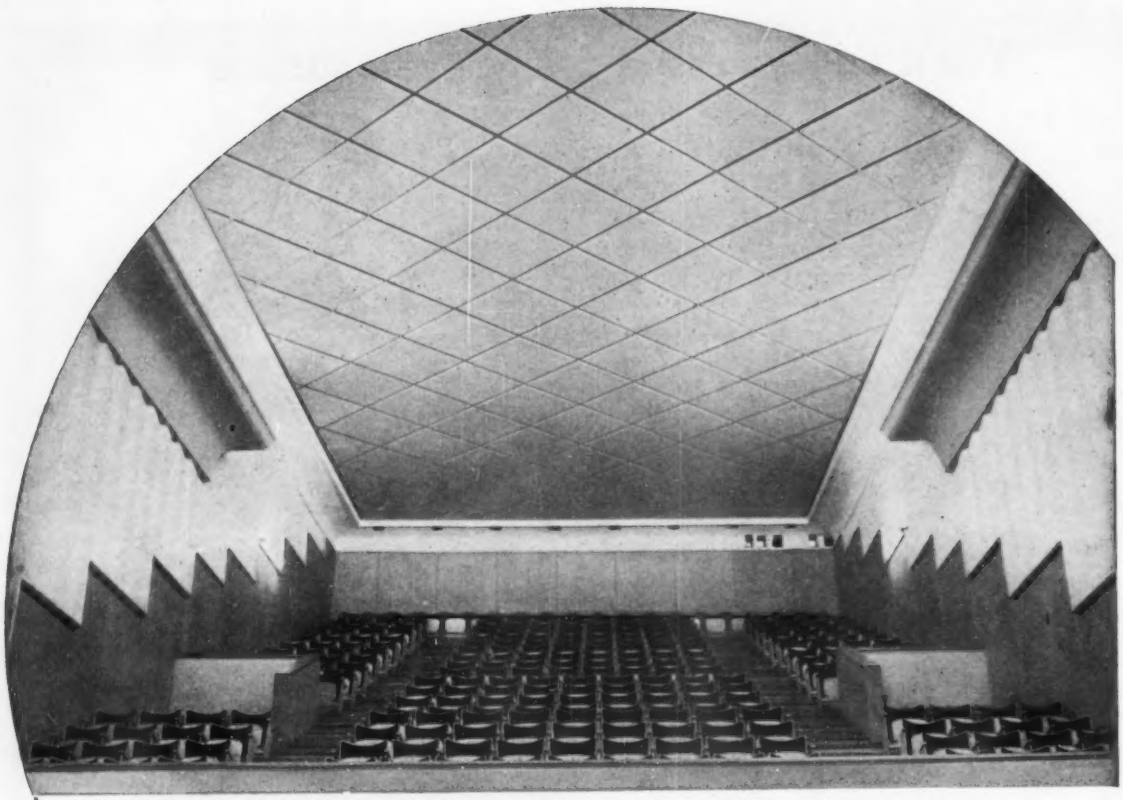

The illustration shows the use of "Glinex" in a cinema in Antwerp.

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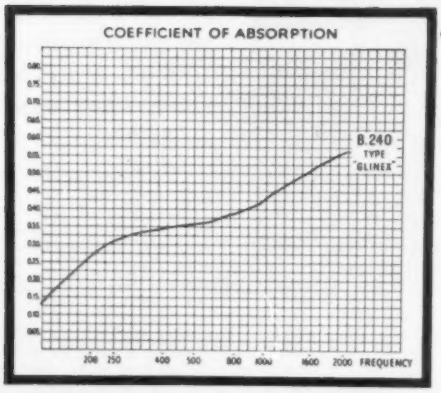

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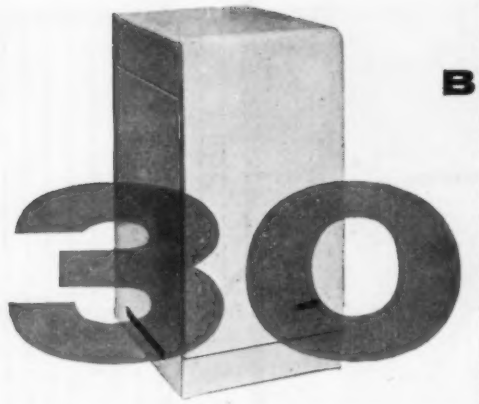

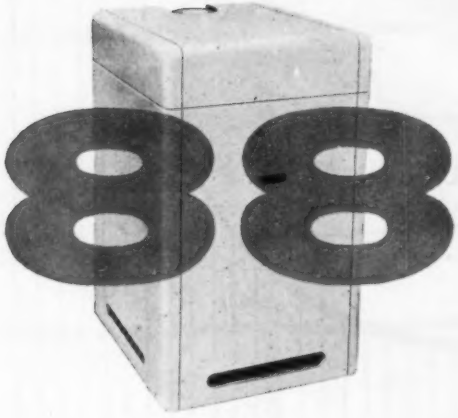

Before you turn over

May we tell you about two new 'Potterton' Gas-Fired Boilers which will be available shortly — the 'Diplomat' 30 (anticipated output 30,000 B.t.u./hr.) and the 'Diplomat' 88 (anticipated output 88,000 B.t.u./hr.). Like the 'Diplomat' 44 these two new boilers are neat and unobtrusive in design, and, apart from the slightly greater width of the '88', occupy the same space as the '44'. They offer the same facilities for easy maintenance, the same foolproof automatic control, and of course, the same high efficiency.

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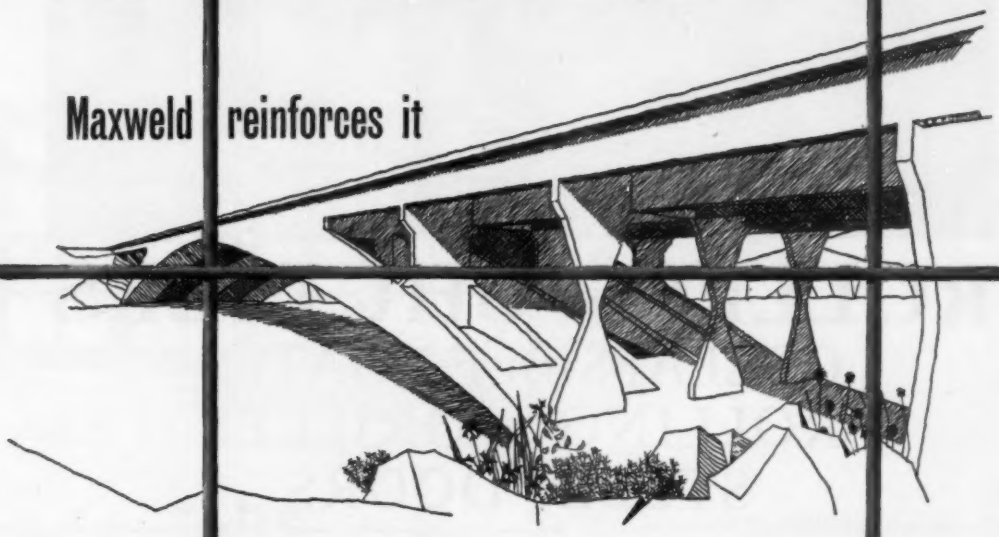

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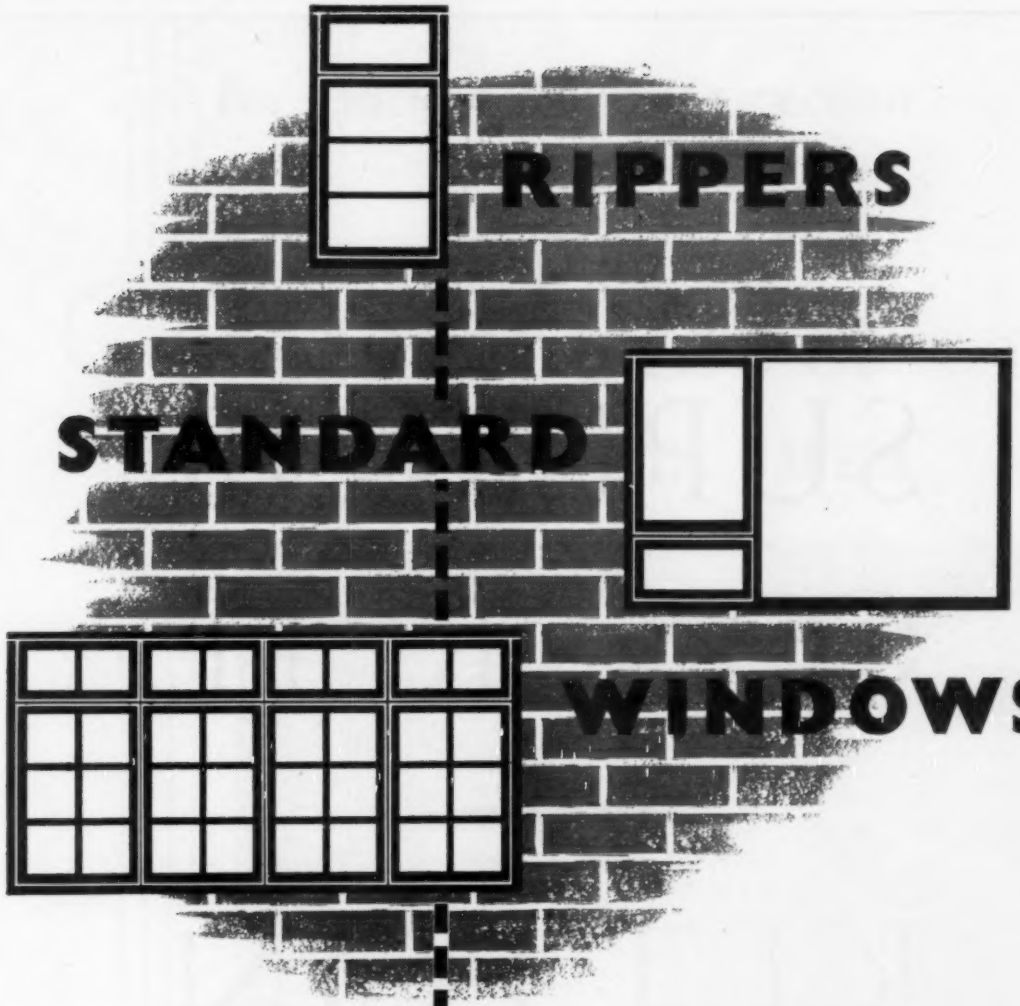

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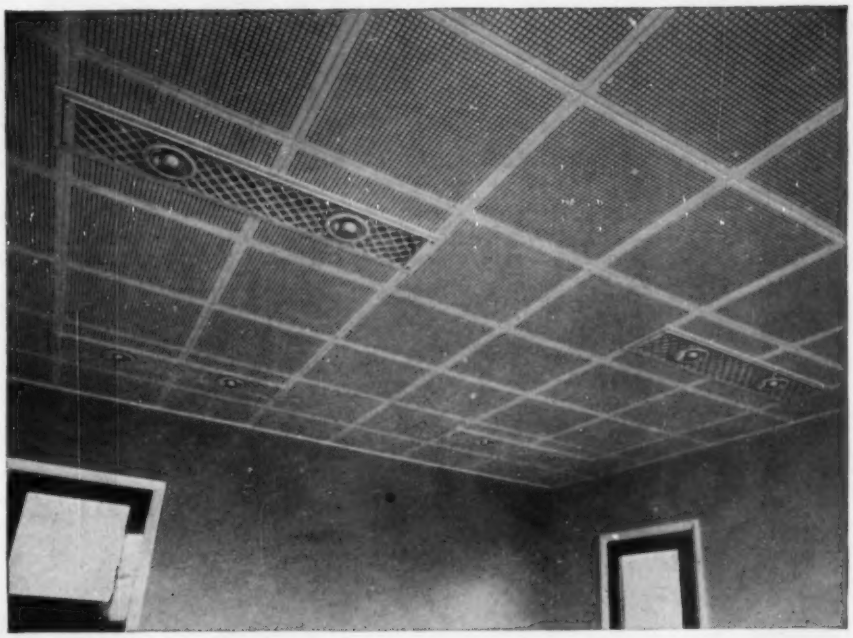

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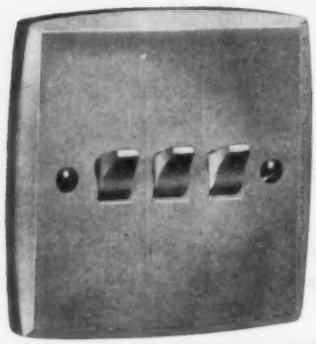

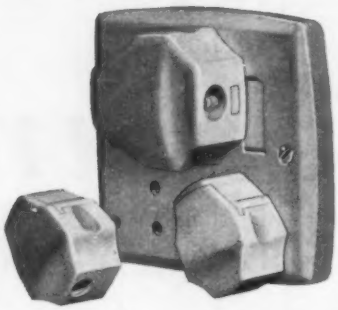

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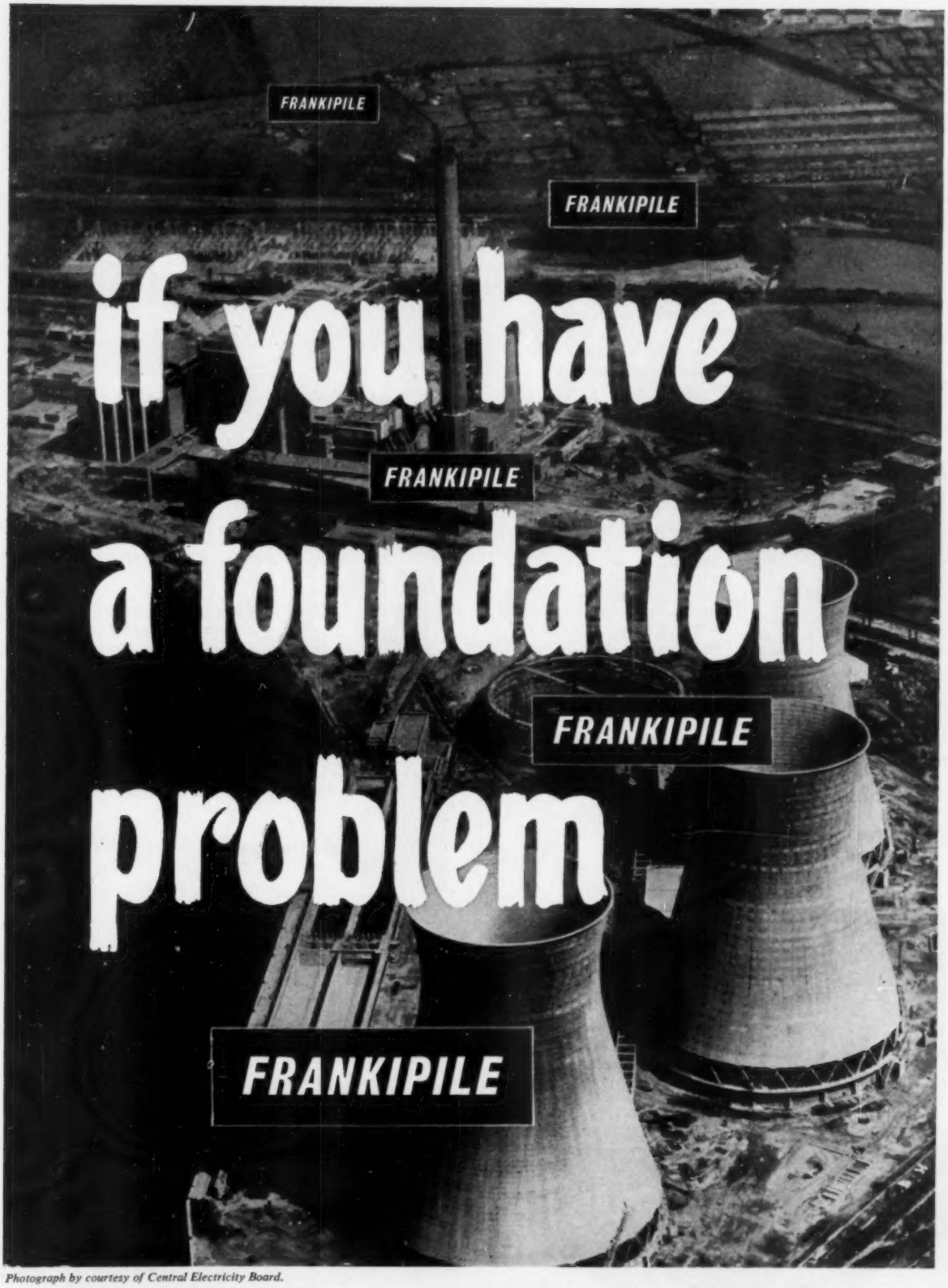

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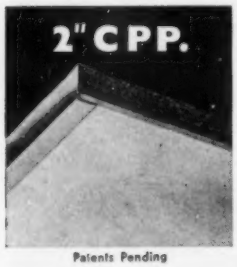

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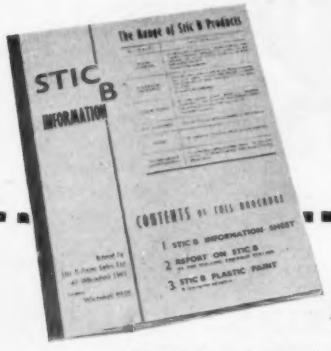

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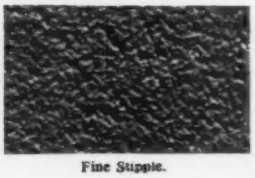

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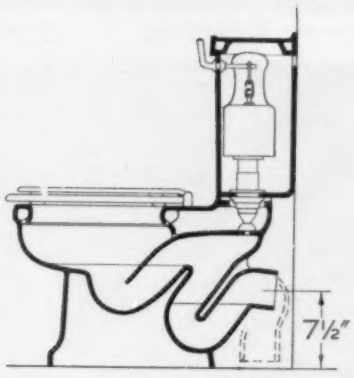

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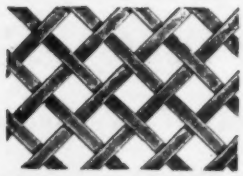
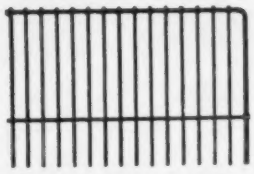
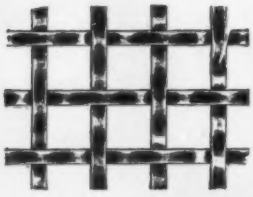
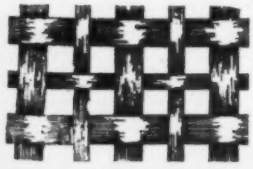
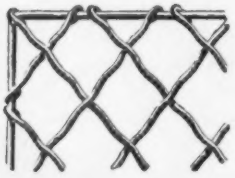
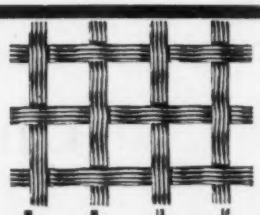
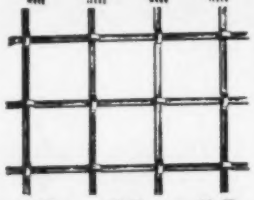
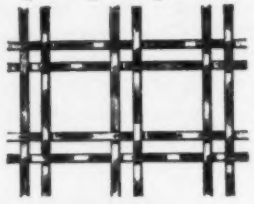

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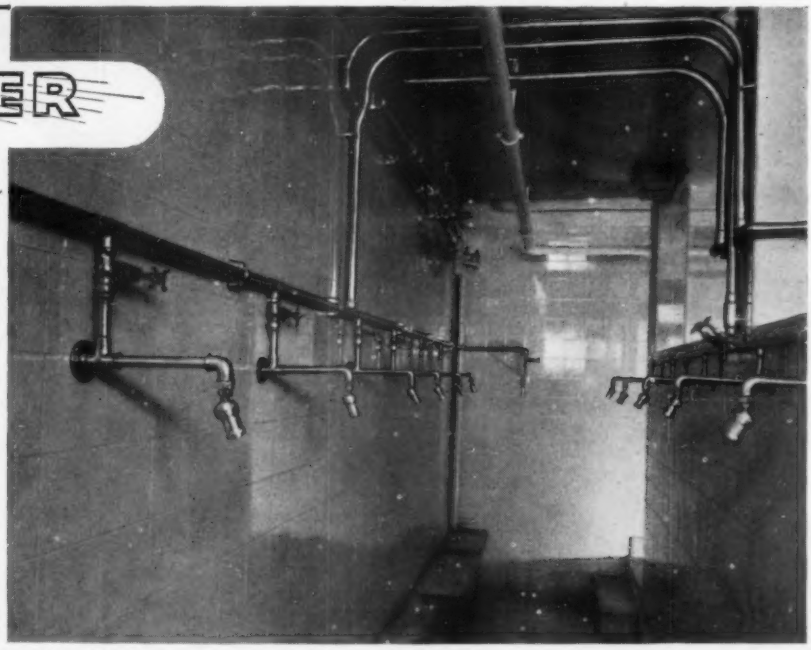

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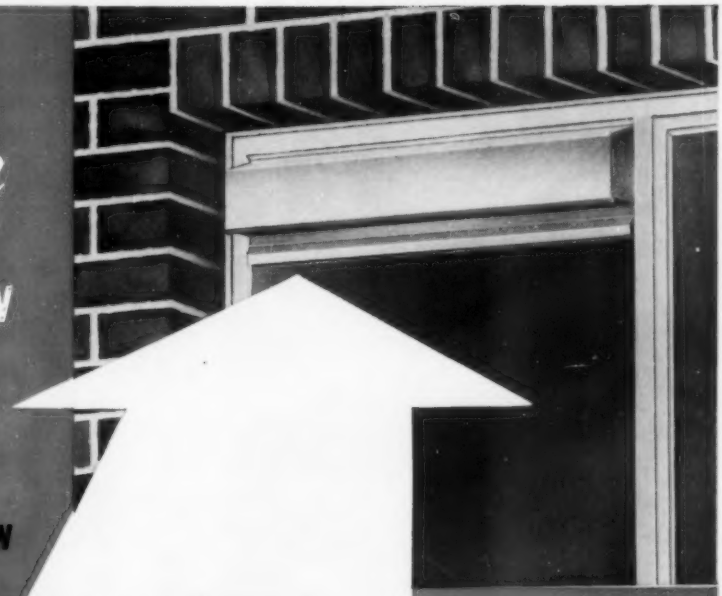

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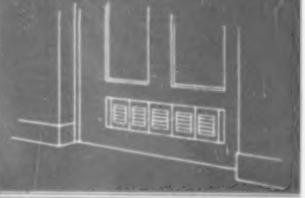

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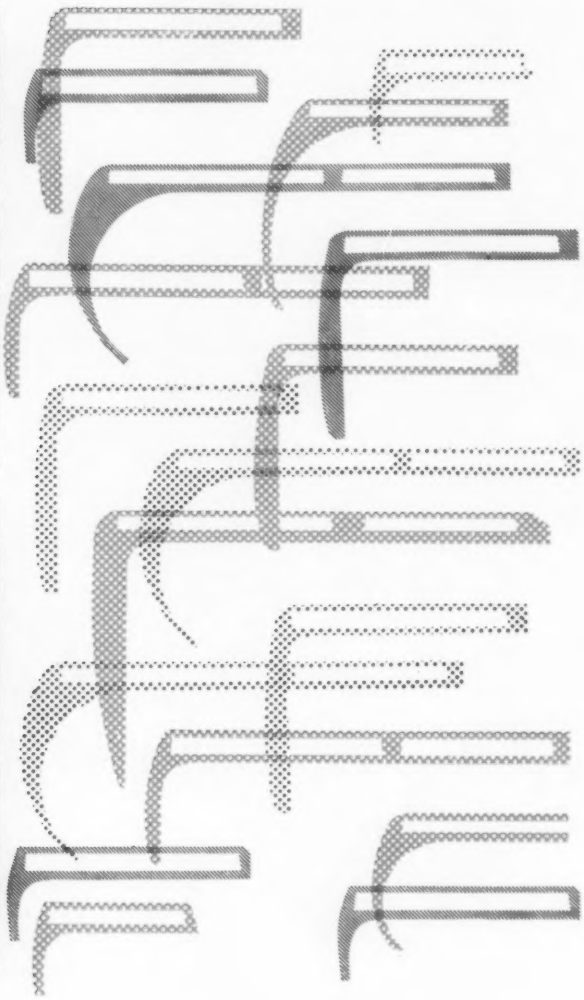

Top illustration: Crown House, Aldwych, London.
Below: Times Furnishing Co. Ltd., Bermondsey, London.

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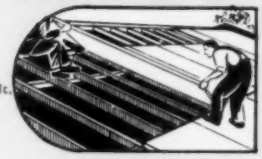

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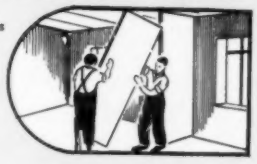

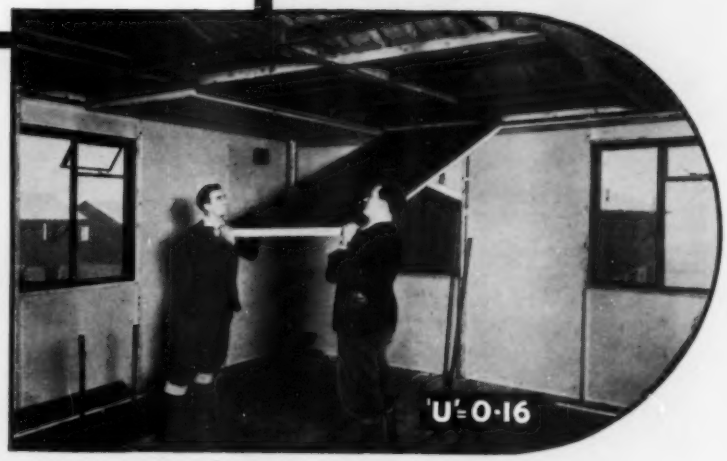

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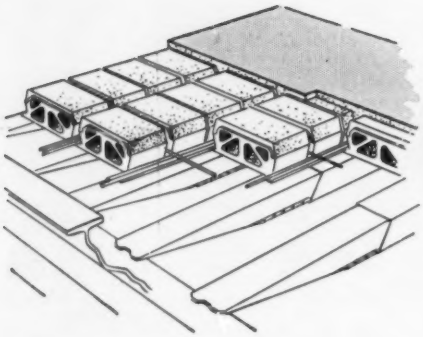

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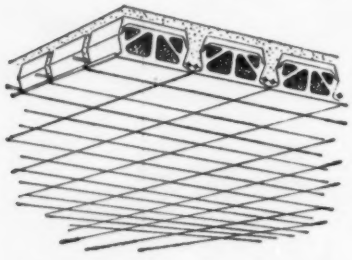

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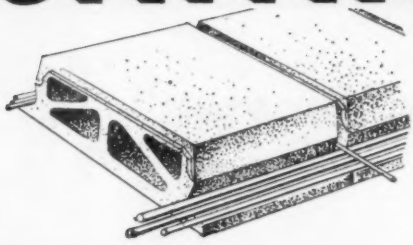

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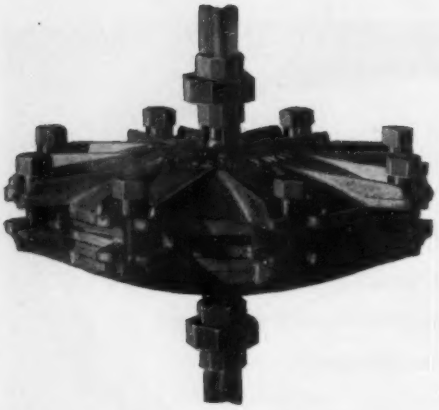

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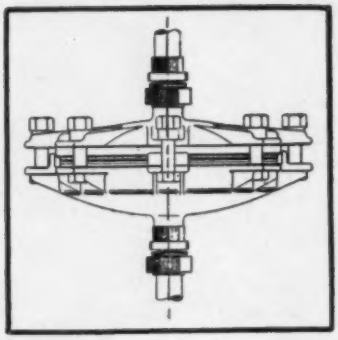

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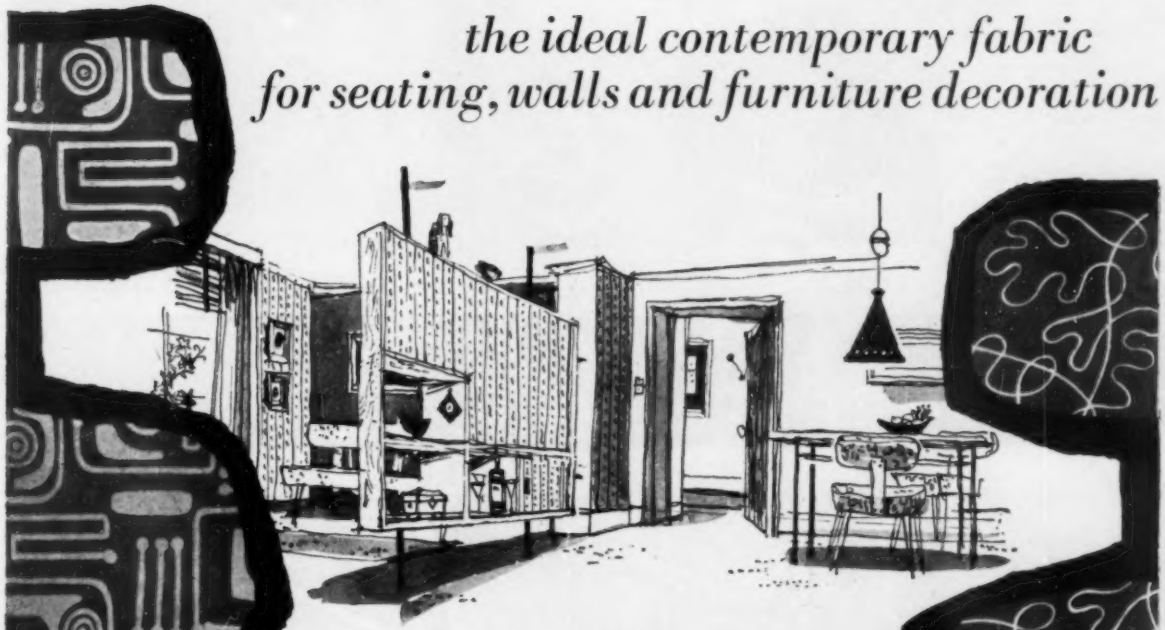

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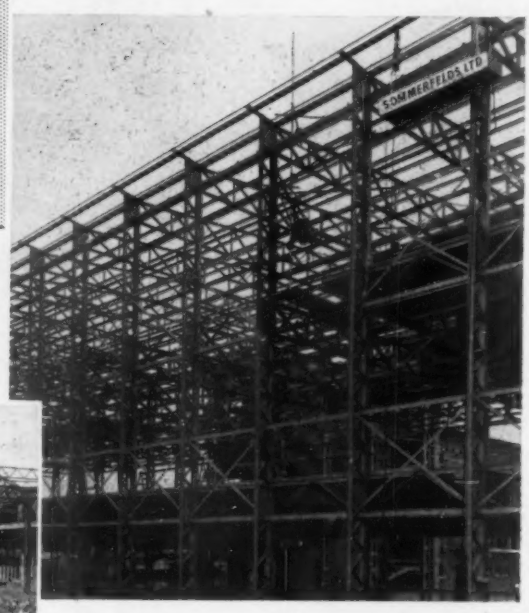

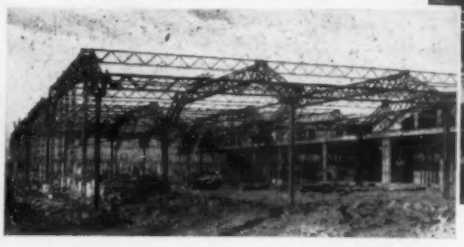

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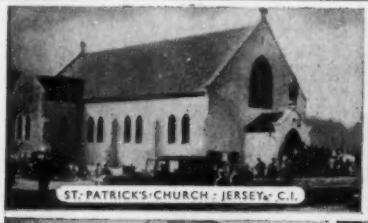

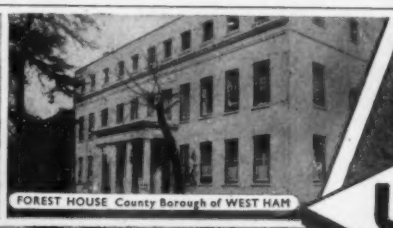

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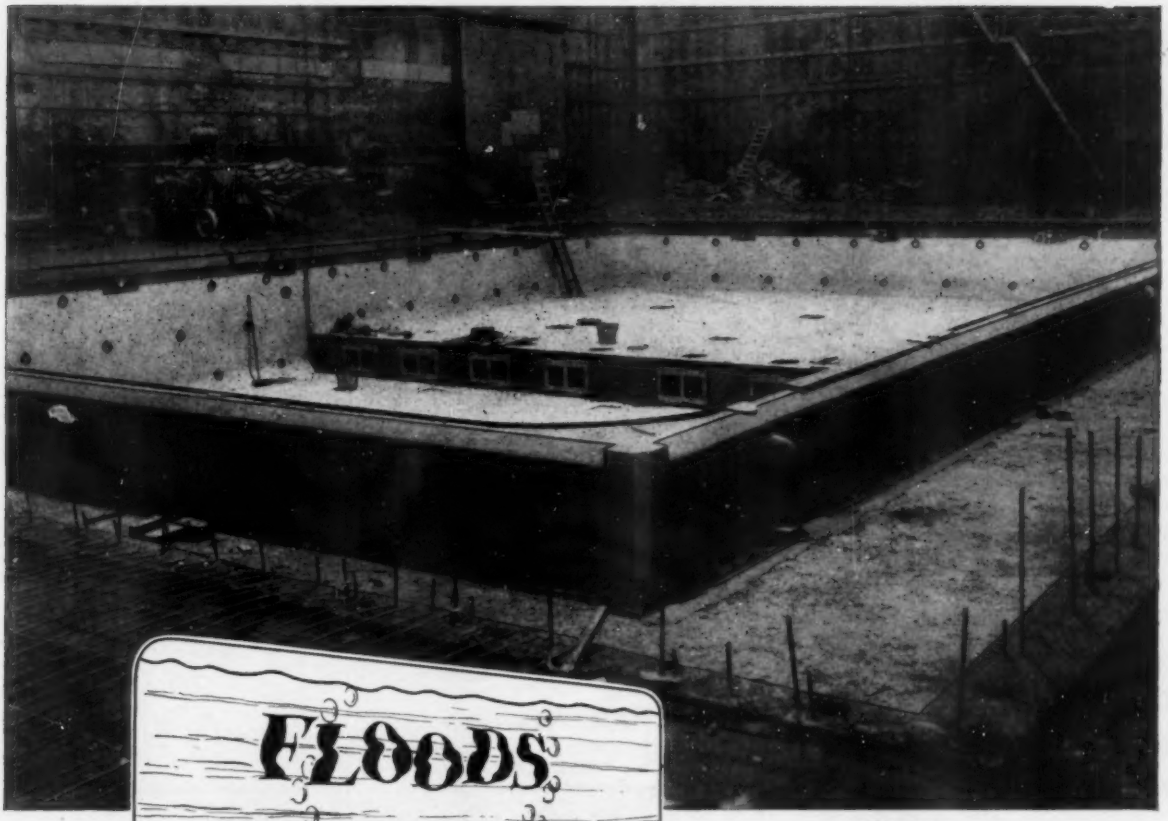

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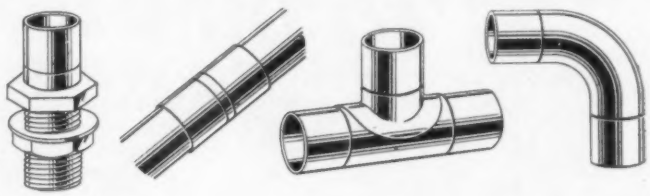

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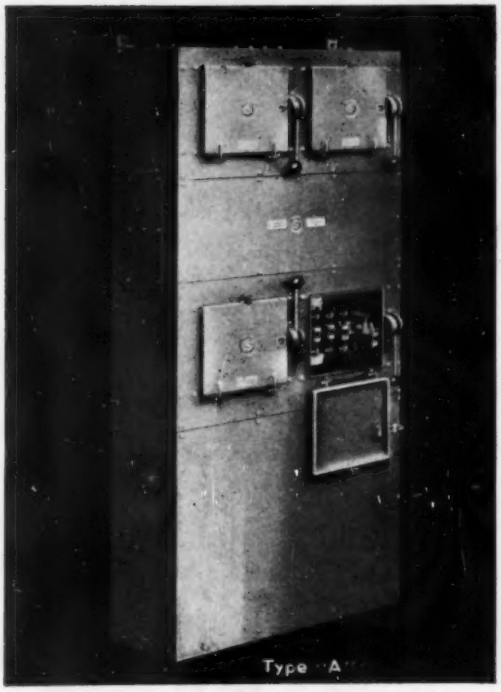

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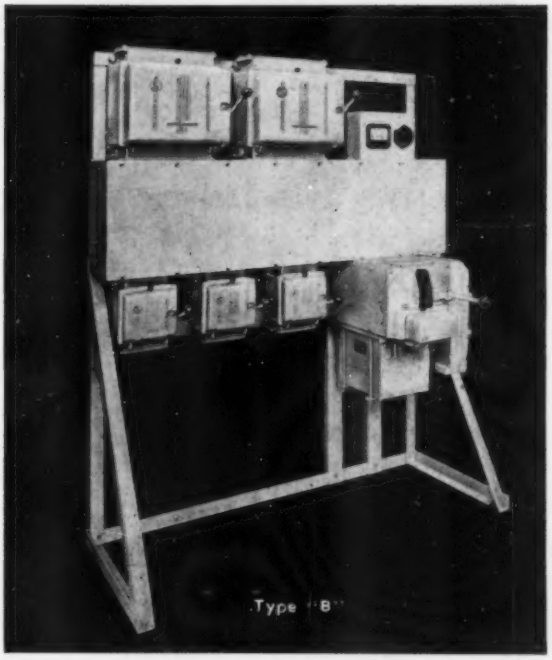

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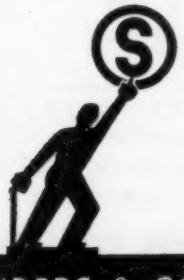

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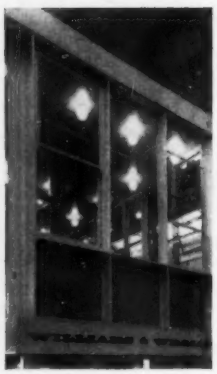

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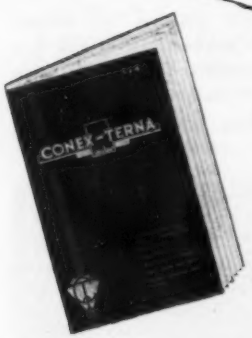

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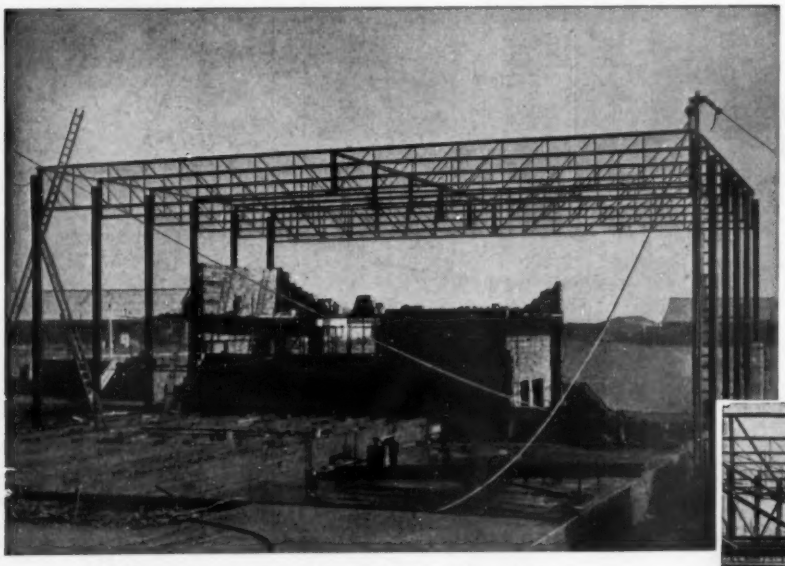

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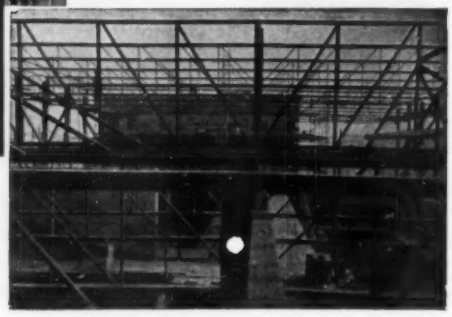

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Vol 210 No. 2

THE ARCHITECT & BUILDING NEWS

July 12, 1956

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BUILDING OVERSEAS AND EXPORTS

IN each year since 1949, the ARCHITECT AND BUILDING NEWS has produced for its readers one special issue dealing with equipment and products of the British building industry which are available for shipment overseas.

In the eighth number of the series, today's issue, the emphasis has been shifted from products to buildings in order to show some of the achievements which British architects, consulting engineers, contractors and suppliers or their associated companies in the Commonwealth and Colonies, have had a hand in since the end of the war. The cross section of building work illustrated is by no means a complete one. It would not be possible to have it otherwise within the space allotted; and there is also the difficulty of obtaining from abroad photographs and other information suitable for publication. But the work illustrated is sufficient to show the trends in building; and in some cases a high quality of design and close study of climatic conditions which combined, have produced buildings of striking architectural worth.

The achievement in countries such as Nigeria, where the impact of Western civilisation comes mostly upon a people fresh from the primaeval forest; where not long ago corrugated iron was the new and popular roofing material; where a house in the Western sense is still very much a novelty—here, the achievement is something to be wondered at.

A tribute is due to all British architects and engineers and contractors who set up offices in far away places, withstanding strange climates, braving the difficulties of site supervision, the problems of staff and the uncertain financial position; it is in this latter respect that the Export Credits Guarantee Department of the Board of Trade have rendered inestimable service to professional firms.

Another kind of service was rendered last year by the President and Secretary of the Royal Institute of Chartered Surveyors, whose tour of Africa, not only blazed a path of goodwill amongst surveyors in that country but enabled first hand information to be obtained of the conditions which surveyors have to cope with and what type of training is required over here to fit those going abroad for their task.

Other institutions might well learn something from the success of this tour, for in prestige and in service to their overseas members who should take the lead other than the royal institutes of Britain?

* * *

On the subject of exports generally, it is encouraging to learn in the report of the activities of the Dollar Export Council, that 1955 was a better year than 1954 for our exports to the dollar markets.

In Canada the success of the Canadian Association of British Manufacturers and Agencies (CABMA) who manage the British Trade Centres in Canada, is noteworthy. In 1955 the association increased its membership by 30 per cent. The CABMA Register of British products and their agents is now sent to over 5,000 Canadian firms; and the success of the register is reflected in the substantial increase in Canadian enquiries handled by the British Trade Centres during 1955.

In its conclusion the report states: "With a few exceptions all the dollar markets are wide open. British goods still have an excellent reputation for quality and, in many cases where everything else is equal, British goods are preferred. . . . The Council does, however, consider that in general British manufacturers would do well to step up their merchandising efforts. In these competitive markets there is no substitute for the first-class salesman, fully supported by his principals at home."

Might these remarks apply equally well elsewhere?

EVENTS AND COMMENTS

BRISTOL PRIZE-DAY

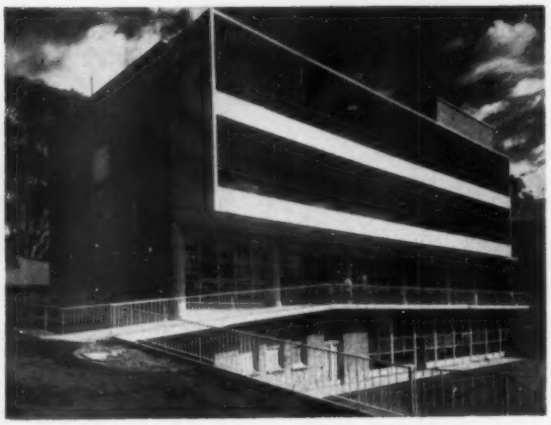
The ties between the Royal West of England Academy School of Architecture and the A.A. have always been very strong. Considering that they are virtually child and parent this is not very surprising. The child is now thirty-five years old and the ties remain strong. The prizes were this year given away by Sir Howard Robertson, a past-President of the A.A., who was principal of the A.A. school when Gordon Hake left its staff to become the first full-time principal of the R.W.A. School. The chairman of the meeting, Terence Snailum, president of the Bristol and Somerset Society of Architects, was trained at the A.A. as was the present R.W.A. S. of A. principal Evelyn Freeth. Also on the platform were Gontran Goulden, President of the A.A., and Eustace Button, Honorary Secretary of the R.W.A. School Committee and one of its first students.

Sir Howard is the perfect choice for a prize-day personality, his manner is at once dignified and cheerful and he has a word for every prize-winner. His address was short and eminently sensible.

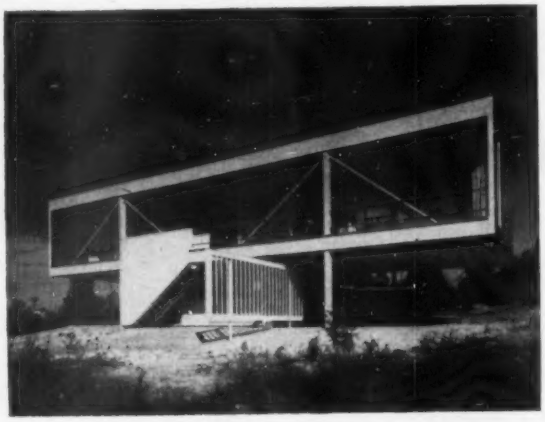
The various students looked pleased to be winning prizes, some were very smartly turned out, but one or two carried informality of dress quite a way. The Bristol School is indeed lucky in being allowed to use the excellent galleries of the Royal West of England Academy for its annual exhibition. This exhibition stands up well to comparison with other schools and I would have liked to have had time to give it as long an inspection as it deserved. One of the programmes illustrated amused me particularly. The students were provided with three bricks and told to support them in space in a particular dimensional relationship, by means of the lightest possible structure in balsa wood. The results were most ingenious.

ROYAL ACADEMY SOIREE

I asked someone what happened at a Royal Academy Soirée; he replied "absolutely nothing" and he was quite right. It was nevertheless, a very pleasant evening. The President and his officers received the guests at the head of the staircase and from then on the evening was free The Royal Artillery Orchestra played in the sculpture room and an enormous and excellent buffet soon attracted most of the guests to the large gallery. There was always plenty of room in the architecture room, only the architects seemed to go there. I had been told that the crowd would be tremendous, but it was not so. Generally speaking there was plenty of room in which to circulate, except near the strawberries and cream. There was even room to see the pictures and many



Austen Hospital, Victoria: built 1954. Architects: Yuncken, Freeman Brothers, Griffiths and Simpson.



House, Turramurra, New South Wales, built 1947. Architect: Barry Seidler.

House, Surfers' Paradise, Queensland; built 1951. Architect: E. J. A. Weller.

AUSTRALIAN ARCHITECTURE

Since this issue is specially concerned with building overseas, my pictures this week are reminders of the "Architecture in Australia Exhibition" held at the R.I.B.A. early this year.

sensible people had remembered to bring their catalogues. I was disappointed in the standard of dress. There were many dinner jackets, some clothing distinguished persons, and a sprinkling of ordinary suits. This function, I believe, was once among the smartest of the season, and although there were some really well turned out women, there were plenty who were not, and that is not taking into account the usual R.A. freaks in lampshades and old lace. I enjoyed myself, but oh! my feet.

BRISTOL BUILDING BUREAU

I mentioned this venture last week. It was opened by the Lord Mayor in the presence of leading people in the Bristol and district building industry. Frank Yerbury, doyen of Building Centerers, was there to thank the Lord Mayor. It is a most praiseworthy effort considering that it was all done in a terrific rush. It would in many ways have been better to have taken it all more slowly but a number of factors had to be considered and it was decided to strike now, and it has struck well.

My only real complaint is that the catalogue is not to B.S. size. Here the BBB has started on the wrong foot.

THAT MONUMENT

I referred last week to Bristol High Cross and said that the 1850 version was a replica of the original. I have since discovered that it is not so. The Victorian cross being of quite different design from the original. I also hear that efforts to obtain the return of the original have been unsuccessful. I imagine that the National Trust finds itself in a somewhat delicate position on a point like this.

I have it on good authority that the fourteenth century cross is in far better condition than the nineteenth century one and this may be the key to the National Trust's shyness of returning the original to Bristol's industrial atmosphere.

THE DRIVE BACK

The riverside garden of the Swan Hotel at Bibury has been ruined by two horrid little erections, one a hut and the other a shelter. Both have flat pitched shingle covered roofs quite out of keeping with nearby buildings. The colour of the shingles will doubtless improve with age but the flat pitch will remain.

The Cotswold Gateway above Burford serves very good steaks and chicken from the grill. The food arrives on an outsize plate, handsomely garnished with vegetables. The cellar is good, too, but the house being in the U.S. belt no one will faint if you ask for a glass of milk with your steak. There are architectural connections, too. The manager is Mr. Darcy Braddell's son.

MORE ABOUT TREES

As a result of my note on Mr. Sandys' proposed technical manual on trees, Mr. R. S. Copestake has written suggesting that he manual should contain advice on the pruning and maintenance of trees. He draws attention to the damage being done all over the country to trees by ignorant loppers.

It was precisely this point that I had in mind when I referred to the Metropolitan Public Gardens Association, whose current report contains examples of good pruning, and whose advisory service covers pruning and maintenance.

A NEW DRAWING BOARD

It must be a very long time since anyone tried to improve the standard drawing board. The Angula Engineering Company have now produced a board having what is described as a "super-stressed laminated wood structure" (I would have called it blockboard) with the usual battens and ebony edge, but having a surface of some light green "composite" material. The advantages of this radical change from established practice are claimed to be that no backing sheet is necessary, the surface of the board being ideal for drawing. However a sheet of thin white paper is recommended as a backing sheet when tracing. The new surface is washable and "encourages the use of adhesive tapes."

STAINED GLASS

I do not know whether it is by design or accident that the exhibition of the work of the Society of Glass Painters at the Building Centre is coinciding with the showing of the great windows for Coventry Cathedral at the V. & A. The former embraces a very wide range of work from a large number of members representing every shade of present day thought on this art. The latter quite uncompromisingly, represents the latest thought in the grand manner. I am told that the Coventry windows are magnificent, but I have not yet seen either exhibition.

H.R.H. the Duchess of Kent opened the Building Centre Exhibition on Tuesday. More about both exhibitions next week.

STOP PRESS

Congratulations to Anthony Pott whom I read in the Times is to be Chief Architect to the M.o.E. in succession to Stirrat Johnson Marshall who is rumoured to be going into private practice with Professor Robert Matthew of Edinburgh.

If the rumour is true they should make a good team.

ABNER

NEWS

French Honour for British Architects.

In the section Festival International d'Architecture et d'Art Monumental of the 1956 Paris Salon of the Sociètè des artistes Francais held recently, architects Raglan Squire and Partners of London, were awarded second medal for the model of their Assembly Hall of the new University of Rangoon.

British Architect Appointment in Lybia

Architects Covell and Matthews of London have been appointed consultants to the Libyan Development and Stabilisation Agency to advise upon export terminal buildings and Abattoirs at Tripoli and Benghazi; projects estimated to cost approximately one million pounds sterling.

R.C.A. New Chairman

Sir David Eccles, the Minister of Education, has appointed Mr. Duncan Oppenheim to be Chairman of the Council of the Royal College of Art in place of Sir Colin Anderson, who is retiring after serving as Chairman since 1951.

Mr. Oppenheim is Chairman of the British American Tobacco Company. He takes a keen practical interest in the arts and has advised the Minister of Works on the selection of paintings for Ministries and Embassies abroad.

The following have been elected Senior Fellows and were introduced: Sir Colin Anderson, the retiring Chairman of Council; The Hon. Josiah Wedgwood, a past Chairman of Council; Sir Jacob Epstein, K.B.E.

The following have been elected Honorary Fellows and were also introduced: Mr. Duncan Oppenheim, Chairman elect; M. Jean Carlu, the distinguished French artist and designer, and President of the A.G.I., and recently formed Alliance Graphique Internationale which has just held a large exhibition in London; Mr. Barnett Freedman, C.B.E., the well-known painter and lithographer.

£16,693,888 for Colonial Development Last Year

Last year the United Kingdom contributed a record amount of £16,693,888 towards the development and welfare of the colonial territories. £1,365,569 of this sum was for research.

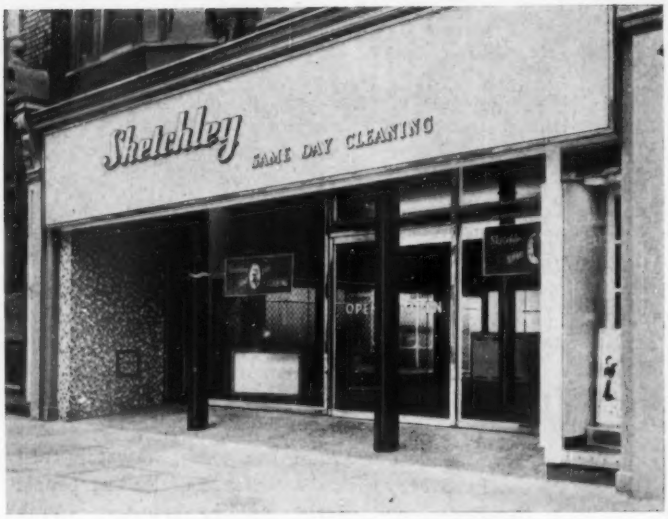
These figures are given in the annual "Return of Schemes made under the Colonial Development and Welfare Acts by the Secretary of State for the Colonies—April 1, 1955, to March 31, 1956," published in June, 1956, as House of Commons Paper No. 309 by Her Majesty's Stationery office, price 2s. 3d.

The total amount of money actually issued for approved schemes under the Colonial Development and Welfare Acts during the ten years ending March 31, 1956 is £117,897,203. Of this sum £10,392,150 was spent on research.

New grants approved last year included £5,285,552 for education (higher education accounting for £2,466,967 of this amount), £5,955,178 for roads, £1,049,809 for civil aviation, £3,979,956 for agricultural and veterinary schemes, £2,812,329 for medical and health services and £3,208,564 for water supplies and sanitation projects.

Research grants approved during the year included £819,495 for agriculture, £332,701 for medicine, £139,281 for locust control and £281,182 for social science.

Grants were approved totalling £111,850 for the *University College of East Africa* of which £103,600 was granted for the construction of a new chemistry laboratory. For *Kenya* a grant of £1,653,370 was made for the intensification of African agricultural development and of £155,000 towards the construction of the Technical College, Nairobi. Grants to *Tanganyika* included £182,339 for African urban housing and £451,890 for water development and irrigation schemes.



The new front to the reorganised premises of a prominent dry cleaning firm, opened last week. The architect for the new premises is Brian Peake.

In *Central Africa* the Univerity College of Rhodesia and Nyasaland was granted £1,050,000 for the construction of permanent buildings.

In *Nigeria* the Federal Government was granted £1,500,000 for the development of trunk roads. For the Northern and Western regions grants totalling £1,748,756 and £1,204,840 were made towards various schemes in their Development Plans. Rural water supplies development in the Eastern Region received £1,312,500.

Under a scheme for the construction of a civil air terminal and apron at Luqa Airport, *Malta* was granted £254,000.

Grants to *Aden* include £176,300 for the Western Protectorate road programme, £100,000 for school building and £194,000 for the construction of a civil hospital. Domestic water supplies and irrigation schemes in *Mauritius* were granted £510,000.

The University of *Malaya* was granted £984,000 for the construction of permanent buildings and *Singapore* received a grant of £206,000 for the construction of a ring road.

Among the grants approved for a variety of projects in the *West Indies*, British Guiana received £1,193,915 as a contribution to their rural and urban housing programme.

Research schemes attracting grants totalled 133 and covered a wide field. They include provision of £40,100 for the maintenance of the Anti-Locust Research Centre, £43,100 for the West African Building Research Institute and £113,569 for the Institute of Social and Economic Research, West Indies. The Caribbean area Regional Research Centre for Agricultural Research received £362,000.

Pre-fab Village for Australian Atomic Test Area

First atomic tests at Maralinga, a site in South Australia selected by Sir William Penney and Mr. W. A. S. Butement, Chief Scientist of the Australian Department of Supply, are scheduled to take place in the autumn of this year. The personnel concerned will be housed in a pre-fabricated village which is now nearing completion.

Housing Progress in Great Britain.

In May, 1956, 25,845 permanent houses were completed compared with 24,934 in May last year. In the first five months of this year, 116,540 permanent houses were completed compared with 128,663 in the same period of 1955. The post-war total for Great Britain now stands at 2,356,190 completed houses, 529,344 of which are by private builders, who completed 10,799 houses in May this year.

In Parliament

Historic Houses

An appeal in the House of Lords for extended help for the preservation of historic houses brought from the Government spokesman a short progress report on what had been done under the 1953 Act and an indication that additional resources might be found when times were propitious.

The Duke of Sutherland opened the debate with a strong plea against old manor houses and castles being allowed to crumble into decay because the owners, impoverished by taxation and death duties, were unable to keep them in repair. He, and others, argued that the best course would be for the Government to enable the National Trust to take them over by providing the Trust with sufficient means to maintain them. Lord Chorley, drawing on his experience of service on various committees of the National Trust, praised the Historic Buildings Council for having done a good job. The administration was in the hands of men who obviously had got sympathy for the work and expert knowledge.

The Earl of Munster, Minister without Portfolio, endorsed the tribute. He told the House that 1,362 applications for assistance had been received, and 429 grants made, amounting in all to £987,000, of which £380,000 had already been spent; there were 105 applications still under consideration. The 1953 Act gave power to assist owners only if the buildings were of outstanding interest, and so far the limited funds available had been sufficiene for the purpose. No grant had yet been refused to any owner whose house was sufficiently outstanding and who himself could not afford to meet the full cost of repairs.

The Government were satisfied with the results achieved. It was becoming clear, however, that the need for grants would become progressively greater than could be met from the annual provision of about £250,000.

U.S. Capital for Hotels

Sir Roland Robinson called attention to the inadequate number of first-class hotels in London for the needs of oversea visitors, and asked what the President of the Board of Trade was doing to see that facilities were available to meet the growing demand. Mr. Thorneycroft said the department would be as helpful as they could to anyone interested in providing additional hotel accommodation in Great Britain that was intended primarily to cater for oversea visitors. Sir Roland Robinson suggested that the attention of American capital should be called to the useful contribution that could be made to the national economy in this direction, and Mr. Thorneycroft told him that he had been in touch with some Americans who were interested in putting capital into investment of this kind. (July 5).

Law and Administration

Planning Payments

While the Finance Bill is still passing through Parliament, it is of unusual interest to see what sums are being spent on planning payments. When in 1954 Mr. Harold Macmillan introduced his changes in the financial provisions of the Planning Acts he indicated what it would cost.

> "We have estimated that £30 million is approximately the sum due to claim holders who have paid [development] charge and to those who have sold land below full value."

It is interesting to compare this figure with those given in the recently published *Report of the Central Land Board* for the financial year 1955-56. This shows that up to 31st March, 1956, the Board had paid out approximately £49,700,000, under Part I of the Town & Country Planning Act, 1954. Of this sum nearly £32 million was in respect of land bought by public authorities and about £12½ million was in respect of private sales of land. Repayment of development charges only accounted for a little under £4½ million. This is not, of course, the end of the story because these figures do not include compensation paid out for past planning decisions. These latter figures have not yet been issued by the Ministry of Housing. Doubtless they will form part of the Annual Report which, if their last Report affords any indication, should be available by about mid-1959.

Development Plans

It is not only Departmental Reports which are slow in coming. The recent approval of the *Middlesex Development Plan*, with some 700 modifications, once more stresses the rate of progress of approval of these plans. At the end of May this year 151 development plans had been submitted of which 88 had been approved. Of the remaining 63 submitted but not approved only 3 were awaiting inquiry. Of those plans which affect Greater London, Hertfordshire, Kent, Surrey and Essex remain to be approved. Among the great towns Birmingham, Manchester, Liverpool, Sheffield, Coventry, Bristol and Cardiff also remain on the waiting list.

Electrical Installation

Those who repair, decorate, or do other work in factories will be interested in the case of *Massey-Harris-Ferguson (Manufacturing) Ltd. v. Piper*. Painters were decorating a factory when one of their number was electrocuted by the wires of an overhead crane and as a result subsequently died. It was said that the Electricity (Factories Act) Special Regulations made under Section 60 the Factories Act, 1937, are made only for the benefit of the *servants of the occupiers* of the factory. Accordingly it was argued that there was no danger to such servants in this instance because independent contractors were responsible for the work. The Court held that the Regulations protected, as they were intended to do, "not only the servants of the occupier, but any other persons who may be called upon to do work in the factory, such as sub-contractors."

Enforcement of Planning Control

The East Riding County Council has made two contributions to planning law in recent weeks. Both cases relate to the enforcement provisions of the Town and Country Planning Act, 1947. The Court of Appeal decision in *East Riding County Council v. Park Estate (Bridlington) Ltd.*, reported in A. & B.N. of 21.7.55 has been upheld by the House of Lords. The House held that if a notice complains of contravention of control before 18th July, 1948, that fact must be clearly specified, and it must specify the nature of the alleged contravention. Lord Radcliffe remarked of the local authority that he had "a good deal of sympathy with them in their problem of finding the right form of words that would do justice to the rather obscure prescriptions of the Act of 1947 on the one side, and on the other that would correspond with their own necessarily imperfect knowledge of the exact circumstances of which they wished to complain." Nevertheless the House held that since disregard of an enforcement notice is an offence involving penal consequences the provisions and formalities of the Act must be strictly observed.

In Posthill v. East Riding County Council the appellant owned a field let out to circuses during the summer. In 1952 he obtained permission to use the field for a circus for some two months subject to a condition that the use be discontinued at the end of that time. The circus duly left but the field was used for the same purpose again in 1955 and an enforcement notice was served alleging a breach of the condition of the permission. It was held that there had been no breach since there had been a discontinuance. The Court observed that "discontinued" does not necessarily mean permanently discontinued.

Opportunities Abroad for Architects

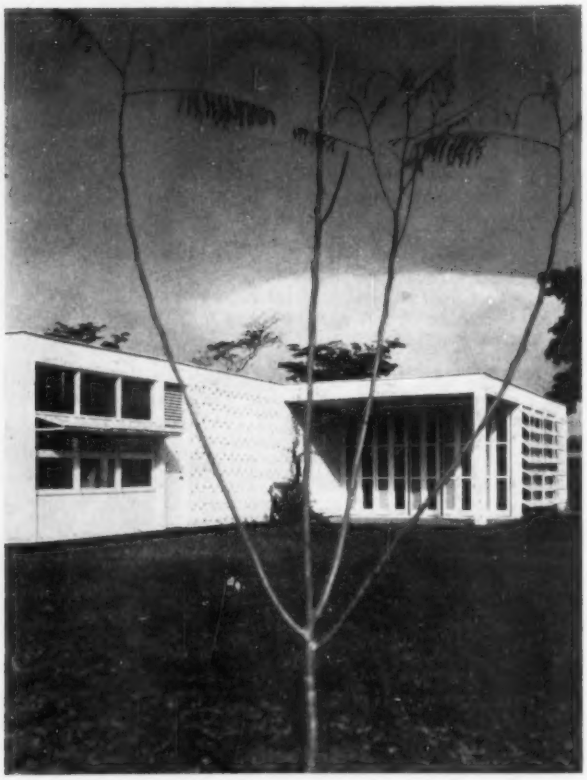
WHEN there is full employment for the profession in the United Kingdom interest in opportunities for architects elsewhere in the British Commonwealth may not be at its highest: but in every profession there are always some who seek outlets for their energies in a new environment. Architecture, like medicine, is a skill of world-wide application and the qualification implied by the affix A.R.I.B.A. is accepted as satisfying very largely, if not completely, the statutory requirements for practice in most parts of the Commonwealth.

The following notes are intended as a general survey. A number of references are given: The reader interested in any particular country would be well advised to consult those references before committing himself.

COST OF LIVING

To-day, as in the past, the true measure of one's earnings lies in the goods and services one can obtain in return for one's work. Unfortunately the purchasing power of money now varies so much from place to place that a mere statement of salaries in terms of money can be very misleading. The cost of living in Australia and New Zealand seems to be little higher than in the United Kingdom, but the cost of housing and rents are higher and the standard of living is higher, so that the professional man needs and receives a substantially higher salary in terms of money to maintain his place in society. In South Africa the picture is much the same and it is certainly true to say that the pressure there is less than in the United Kingdom. No one works such long hours or so hard. The offices of the Dominions High Commissioners in London will supply on request general information on living costs, including rates of taxation and social services. Similar information about the Colonies and other United Kingdom dependent territories may be obtained from the Overseas Information Service, Central Office of Information, Norgeby House, 83, Baker Street, W.1.

Picture of a Headmaster type house at the Kumasi College of Technology, Nigeria, designed by James Cubitt, Scott & Partners.



QUALIFICATIONS

In the absence of special individual circumstances it is almost always of advantage to be fully qualified before going overseas. Firstly, the examinations are over and done with and the possible handicap of being remote from any school of architecture or examining body will therefore not arise: secondly, the Associateship of the R.I.B.A. has a definite market value in the employment field overseas: lastly, as already mentioned, it goes very far or even all the way towards qualification for registration in the Commonwealth country and for membership of the Dominion Allied Society concerned.

CONDITIONS OF ENGAGEMENT

This paragraph is intended mainly for those who have been offered and are proposing to accept engagements overseas while still in this country. Those who venture forth without a signed contract in their baggage will have the opportunity not only of studying local condition and terms of employment but also of refusing to commit themselves to a lengthy period of service to one particular employer. To avoid disappointment and possible hardship to himself and his family, an architect who is offered employment overseas should make it a condition of his acceptance that an agreement be drawn up in writing. This agreement, from the point of view of the person engaged, should set out clearly the contracted length of service, the conditions under which it may be terminated by either side before the contract period has expired, the remuneration and whether it is to be paid weekly, monthly, quarterly, etc., the holidays, apart from statutory ones, to which he will be entitled, a brief but clear definition of the duties he is to undertake, and last but not the least important, any provisions as to the payment of passage monies and the finding of accommodation. The employer will, of course, wish to insert other clauses, and of these the most important to study and understand are those covenants restricting other employment or practice by the employee in place or time during, or

Perspective of the passenger handling building at Windsor Field, Nassau, Barbados. Architects: Norman & Dawbarn. Contractor: Higgs and Hill Ltd.

after the expiration of the contract and any clause providing for the repayment of part or the whole of the passage money in certain events.

Most of the above considerations are more relevant to contracts of engagement with private firms or commercial and industrial undertakings. In government appointments the conditions of service, though laws unto themselves, are usually made quite clear to applicants, with little choice of amendment, and do not contain restrictive covenants of the sort mentioned.

PUBLIC APPOINTMENTS

All public appointments in the Dominions and most in the Colonies that are open to architects in the United Kingdom are advertised in the weekly architectural press. As far as the Dominions are concerned, the usual procedure is for short-listed candidates to be interviewed by a selection panel in London; but after that there is a fairly long delay while the names of those selected are submitted to the Dominion government department for final approval. It is within knowledge that not a few successful applicants have despaired at the length of the interval and have taken up employment elsewhere in the meantime. As regards the Colonies and oversea territories in West and East and Central Africa, South-East Asia and the Far East, the West Indies, the Pacific, the Mediterranean and the Middle East, official architectural appointments are dealt with by the Director of Recruitment of the Over-Sea Service Division of the Colonial Office. There is no regular periodical selection of candidates; vacancies being filled as they occur; and architects interested in any of these parts of the world may, therefore, send completed forms of application (obtainable upon request) to the Director of Recruitment at any time of the year.

PRIVATE PRACTICE

The engaging of an architect, unseen and unknown, some thousands of miles away and the concomitants of the payment of his passage money and salary for a minimum period (usually not less than one year), are hazards which few private employers will readily undertake. It is therefore rather the exception than the rule for principals in private practice overseas to engage assistants from this country by correspondence and without having previously interviewed them. Those that do, usually and understandably, impose some form of restrictive covenant which an applicant on the spot and who has paid his own passage would not normally accept. Occasionally principals of some of the bigger firms in the Dominions try to obtain staff for their offices during holiday or business visits to the United Kingdom. Less frequently some overseas firms make arrangements for applicants to be interviewed by an architect acting for them in London.

TEACHING APPOINTMENTS

A small number of teaching appointments in the Commonwealth are advertised in this country during the course of the year, but architects who are particularly interested in teaching overseas might well be advised to enquire direct from the heads of the schools of architecture in the Commonwealth: a list of these schools is printed in the R.I.B.A. booklet entitled "Membership of the R.I.B.A." Even though there may not be an appointment immediately available, one may result eventually from the enquiry.

AUSTRALIA

There is an immense and expanding building programme and a continuous demand for experienced assistants in both public and private offices. Any young competent architect with three or four years' experience will have no difficulty in obtaining employment, especially if he goes to one of the larger cities. Salaries are on the whole higher than in England. As a rough guide it has been said that some of the larger firms might pay an English assistant about thirty per cent. more than his last salary in England. Housing is, however, a great problem. Many firms help newly engaged staff with temporary accommodation for short periods up to six months. The Commonwealth Department of Works recently advertised several vacancies for architects within the salary range of £1,778 to £1,943. Further information about these openings may be obtained from the Public Service Board Representative, Australia House, Strand, W.C.2. There is a useful series of "Facts about . . ." pamphlets obtainable from Australia House: one deals with wages and taxation and provides a useful basis for comparison with the United Kingdom: others cover housing, social services, education and health. As a general rule Associateship of the R.I.B.A. or a qualification obtained at one of the schools of architecture recognised for exemption from the R.I.B.A. Final Examination is accepted for registration in Australia and membership of the Royal Australian Institute of Architects, but those thinking of going there would be wise to write to the Secretary, R.A.I.A., Daking House, Rawson Place, Sydney, N.S.W., and check that their present qualifications are valid in the State in which they propose to work.

CANADA

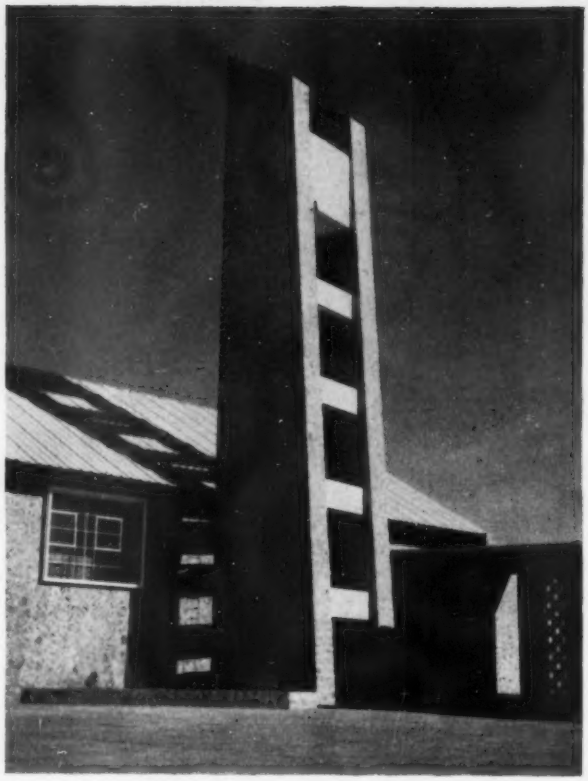
In recent years there have been more architectural immigrants into Canada than to any other Dominion.

Opportunities abroad for Architects

It is probably due to this, together with their own sources of supply and recruitment from the United States, that public and private offices in Canada have had little recourse to advertise for staff in the United Kingdom. Indeed, the Royal Architectural Institute of Canada have said that it is seldom possible for intending emigrants from the United Kingdom to obtain employment with a Canadian firm solely on the strength of a written application, no matter how well supported, and that applications will be considered only when the applicant is already in the country and available for interview. The cost of living is substantially higher and one may need up to twice one's English salary to maintain a standard similar to that enjoyed before emigrating. Registration is in force throughout Canada and is administered independently by each province. The qualifications and procedure required for registration differ in the various provinces and are linked with candidature for membership of the corresponding provincial association (chapter of the R.A.I.C.) Associateship of the R.I.B.A. does not automatically qualify for registration: in some provinces an examination in practical experience after one year's employment with a Canadian registered architect is required. Registration in the Province of Quebec and membership of the P.Q.A.A. are restricted to Canadian citizens. British nationality does not automatically carry Canadian citizenship which can only be acquired after completing five years' residence in the Dominion. Some useful information about the prospects of obtaining employment in Canada was published in the R.I.B.A. Journal for September, 1952: although this was nearly four years ago, that information has not ben outdated by prevailing conditions. The address of the Secretary of the Royal Architectural Institute of Canada is 88, Metcalfe Street, Ottawa.

NEW ZEALAND

On a smaller scale the prospects are as encouraging as in Australia and, although fewer architects have emigrated from the United Kingdom in the last two or three years, the qualified and competent should find ample opportunities. Several public architectural appointments in both government and municipal offices have been advertised in England in recent years, but very few private architects practising in New Zealand try to obtain staff by advertising or direct enquiry in England. The New Zealand Institute of Architects Act, 1913, (under which the N.Z.I.A. itself is incorporated) provides for the registration of architects, and no person may be registered or admitted to membership of the N.Z.I.A. unless he has one of the recognised qualifications which include the Associateship R.I.B.A.. There are about five hundred practising architects in the Dominion, of whom the majority are in either Auckland or Wellington and the remainder distributed over six



Water tower, Aden Girls' College, Khormakaar.

or seven smaller towns. About sixty per cent. are in private practice as either principals or assistants. The N.Z.I.A. issues an officially recommended scale of salaries, particulars of which, as well as other information, are obtainable from the Institute at 39, Johnston Street, Welling, C.I. The cost and standards of living are not very different from those in England. Accommodation is a difficulty, especially in the larger towns.

SOUTH AFRICA

In the Union there is a large and increasing volume of building work in execution and in prospect. In the immediate post-war period the Union appeared to be the Dominion most attractive to architectural emigrants. There are about seven to eight hundred registered architects in the four provinces of the Union, and nearly the same number of students in the various schools of architecture. As in the other Dominions, it is very difficult to obtain employment or a partnership solely by correspondence, but those wishing to make preliminary enquiries should write to the Secretary of the appropriate provincial institute; the addresses are given in the R.I.B.A. Kalendar: or, if particularly interested in government or municipal employment, to the Secretary for Public Works, Central Government Offices, Vermeulen Street, Pretoria, or to the City Engineers of Bloemfontein, Cape Town, Durban, East London, Kimberley, Johannesburg, Port Elizabeth or Pretoria. As already stated, the standards of living are higher than in the United Kingdom so one would need an appreciably higher salary.

INDIA AND PAKISTAN

So far as is known there is at present no architectural society in Pakistan, nor is there any reliable information as to the prospects there. There are a number of European architects in government service in both countries but the declared policy is the ultimate staffing by their own countrymen. The Indian Institute of Architects is centred on Bombay but there are, at any rate nominally, chapters in Dehli, Calcutta and Madras. Of the hundred and sixty odd, R.I.B.A. members, most of whom are Indian, practising in India ninety-five are in Bombay State and a further twenty-eight in Delhi State. With regard to private practice, in both countries a considerable amount of work is being done by London firms, but there have been no enquiries for salaried staff from the United Kingdom for some time. There is no registration in force in either country and, if stories are to be believed, no standard and locally enforced scale of fees.

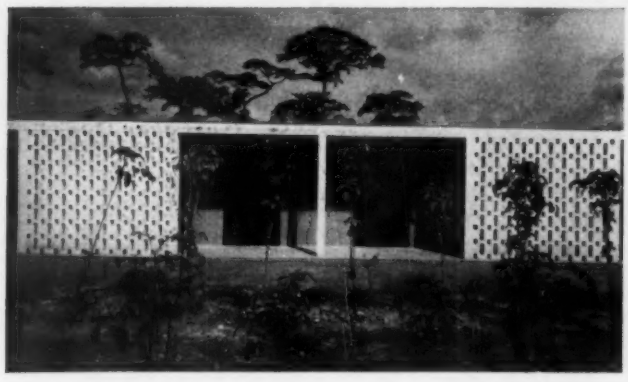
CEYLON

Architectural affairs are little more orderly than in the new self-governing territories to the north. There is an architectural society sponsored by private practitioners and not at present allied to the R.I.B.A. Architects in Government service are not at present participating in the society but have set up a registration act. A considerable building programme is in prospect but openings for European immigrants are doubtful since the policy is now preference for the Ceylon-born.

EAST AFRICA

Of the total private building work carried out in Kenya about half takes place in Nairobi and the rest is spread over the other six municipalities. Kenya, Uganda and Tanganyika are all rapidly developing and since the end of the war there has been a steady but moderate demand for assistants from the United Kingdom, mostly from large and well established firms. Until recently, at any rate, most of the housing work was in the hands of building contractors while non-residential work was done by architects. Registration, for which the Associateship R.I.B.A. is a qualification, is in force in each territory. Separate architects departments are maintained by the following authorities:— Kenya: Public Works Department, Government Town Planning Department, East Africa Railways and Harbours Administration (this covers all three territories), Nairobi City Council, East Africa High Commissioner, East Africa Posts and Telegraphs. Tanganyika: Public Works Department, Survey and Town Planning Department. Uganda: Public Works Department, Office of Government Town Planning Adviser. Both the cost and the standard of living are higher than in the United Kingdom.

Servants' quarters at the Kumasi College of Technology, Nigeria.



THE RHODESIAS

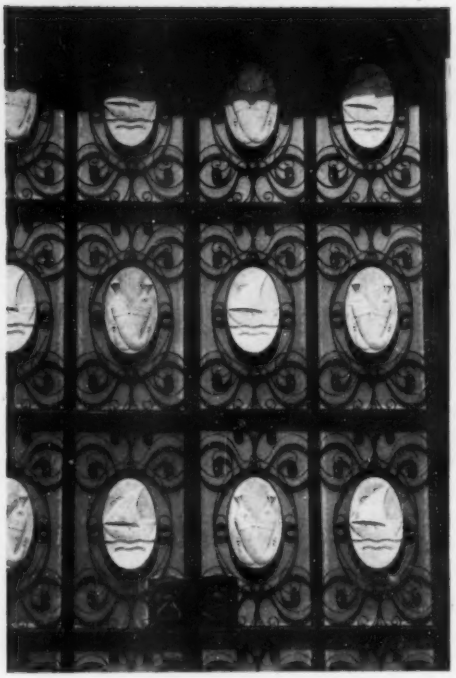
Southern Rhodesia has been rapidly developing since the end of the war, particularly Salisbury which is now the capital of the Federation of Rhodesia and Nyasaland. The demand for assistants from this country has been small and mostly for official appointments. There are some thirty firms of architects in practice in Salisbury and both the Public Works Department and the Municipality have separate architectural departments. Newcomers to Southern Rhodesia are unlikely to find any difficulty in obtaining salaried employment, but establishing an independent private practice might prove a much tougher undertaking. From Northern Rhodesia there has so far been little demand for assistants for either private or public service. Non-federal appointments are still made by the Director of Recruitment of the Overseas Service Division of the Colonial Office. Nevertheless there is an enormous expansion in progress with a rapidly increasing building programme. The few pioneer architects who have ventured there on their own have found their feet. An appreciable number of South African architects are working there. Information as to prospects in Nyasaland is unfortunately lacking. Registration is in force in all three territories and the Associateship R.I.B.A. is a qualification.

WEST AFRICA, THE WEST INDIES, THE PACIFIC ISLANDS

There has been very little demand for architects from the United Kingdom. What there has been was mostly for filling official appointments which come under the Director of Recruitment, Overseas Division of the Colonial Office, from whom information may be obtained.

A survey such as this can do little more than sketch in broad outlines and perhaps give an indication of the sources of further information. The would-be emigrant must also consider factors other than architecture, e.g. living standards one gets servants in South Africa but not in New Zealand: politics: there is little prospect for non-Africans in South Africa outside Natal: climate: Canada and Northern Rhodesia are extreme while in New Zealand is very like England. Lastly, is emigration to be a complete and final move or simply taking a job. Why is it any more serious to move from, say, Yorkshire to a job in Australia than to a job in Wiltshire? The world may have once been someone's oyster, but the architect is still fortunate in having the British Commonwealth as no mean building site.

WILLIAM WEYMOUTH



THIS page commences a review of buildings overseas. Buildings in West Africa and the West Indies are dealt with in some detail from pages 46-61, followed by 17 pages in which buildings in many parts of the Commonwealth and Colonies have been selected for illustration in one or two views. In most of the work shown, British architects, engineers or contractors have played their part singly or as a team.

One of the Wrought Iron doors at Government House and Police Constable on guard.

Building in Aden,

by D. B. DOE. A.R.I.B.A.

BUILDING in Aden has progressed in both quantity and quality during the last few years.

It is only five or six years ago that all floors and roofs were constructed with imported timber joists and boarding, with a lime concrete covering. Concrete blocks and reinforced concrete were virtually unknown. Local contractors were chary of new techniques and the expenditure on equipment which, to them, may not have produced an economic or saleable article, as there were then very few examples showing improvements over existing methods.

However, this has to some extent been overcome by an influx of new contractors, a few of whom initially came to help build the new refinery.

It is fairly true to say that now, except for the private house and flat building owner who wishes to cut capital cost to a minimum, most buildings include concrete floors and steel windows and utilise a minimum of timber in the construction.

The construction of the oil refinery at Little Aden has of necessity produced its own schools, housing schemes of varying grades, hospital and so on, but the purpose of this article is to show that the rest of the Colony has not been behind in building development and there has been a great impetus in the building industry. Many private houses, blocks of flats, shops and godowns have been and are being built.

Apart from the private work in Aden, Government building has progressed with rapidity and in spite of many unforeseen setbacks, a certain pattern of development has been adhered to.

Due to the rapid increase in population, one of the main problems has been the housing of the lower income groups among the indigenous population. In 1955 the Class "C" Housing Scheme, in Maalla, on the slopes at the base of Jebel Shamsan, finally materialised and it will be completed during 1956. The scheme consists of 65 separate units, each unit comprising three or more usually four blocks of six flats each—making a total of over 1,500 flats.

The floor area of each flat is 420 square feet, built at a cost of £535 to which must be added the cost of roads, sewage disposal and water supply. The whole scheme is financed by the Colonial Development Fund.

The purdah system, which necessitates absolute privacy and security for the women increased the difficulty of design. The rocky site necessitated building in flats and this has meant that the purdah ladies cannot have individual enclosed courtyards open to the sky which they normally enjoy in single storey quarters. This problem has, to some extent been overcome by providing within each flat a courtyard space with an open fret or brise soleil on one side. Off this courtyard each flat has a W.C., washroom and kitchen with a small floor level sink. Two adequate living rooms lead off the courtyard. The buildings are constructed with hollow block walls, concrete floors and simple pitched roofs of asbestos sheets. The flats are all provided with electricity and running water. Access to the flats is by means of a reinforced concrete staircase off which lead the various balconies.

The scheme also incorporates sites for a mosque, police station, welfare buildings, boys' and girls' schools and football ground and, since it will be served by three bazaar areas, the whole layout forms a self-contained housing estate.

Several miles away, on a small promontory named Ras Tarshyne, overlooking the outer harbour, now stands the new Government House which is one of the first buildings seen by ships visiting Aden.

The position of the new Government House is as near as possible on the same site as the old bungalow-type Government House (now demolished) and therefore the ready-made garden and trees already form a colourful setting for the new house.

The builder was a well-known Arab contractor and the cost of this building was in the region of £90,000.

The Girls' College

This college was built on an open site at Khormaksar near the new Civil Hospital. It is a three stream school with facilities to accommodate over 300 Arab girls, including a teacher training centre.

The design includes an assembly hall, an administration wing, main classroom wings and a wing which comprises the main entrance for the girls with cloakroom and the needlework, handcraft and art rooms.

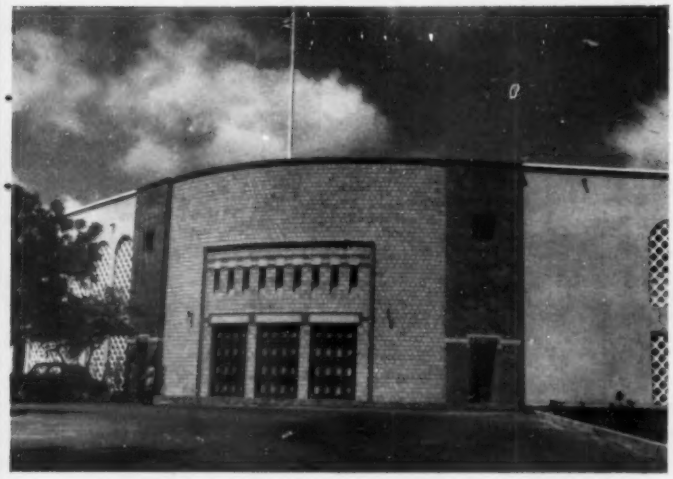
Arab women teachers are accommodated on the site in a separate block of six suites with lounge and patio which connects with a verandah to the dining and kitchen unit. It is the intention to provide at a later date a dormitory block for a small number of girls whose homes are in the Protectorate. However, purdah restrictions may hamper its usefulness at present.

The general design is on the open-plan principle forming enclosures and is dominated by a high stone water tower which is a feature of the design. All the wings are single storey and are planned with wide verandahs enclosed on one side with red brise soleil screening which runs the length of the building, providing privacy and at the same time breaking up the direct sunrays for coolness.

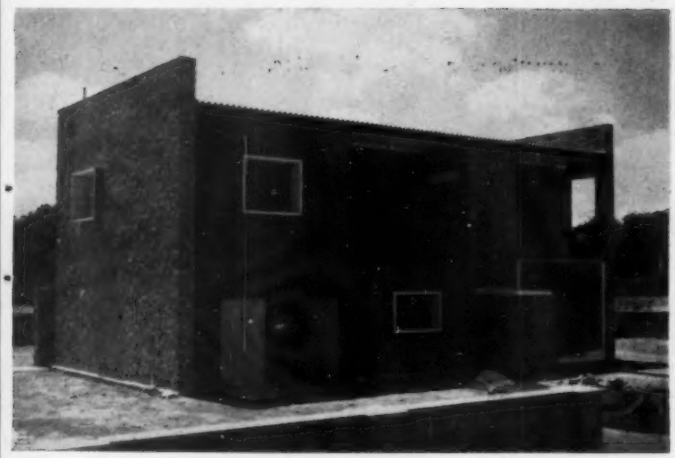
The roofs are all of a double type allowing a passage of air to keep them cool; fans are also provided.

An interesting feature of the school has been the provision of coloured asbestos sheets of a special type as wall covering in place of the usual plaster. This has been done to try and cut down the maintenance costs, as these sheets

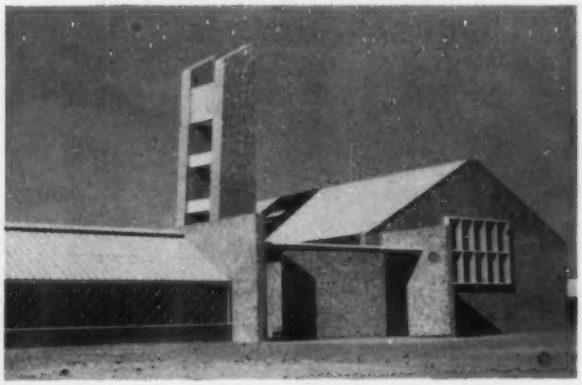
Government House, entrance. Architects, P. W. D. Aden



A New Government House at Sheikh Othman. Architect: D. B. Doe



Rear view of the Aden Girls College at Khormaksar. Architect: D. B. Doe



General view "C" Class, Housing Estate, Maala. Architects: P. W. D. Aden

Building in Aden

Left: Six storey Besse Flats at Maala, Aden. Right: A new hotel.

need only to be washed down to remove all traces of scribbling or other marks.

A large covered playground has been provided in the grounds so that games such as netball can be played in the shade, though it is expected that physical training will take place in the Assembly Hall which has been fitted with wall bars and ladders so that it can serve as a gymnasium.

The floors are tiled with coloured asbestos tiles throughout and the various wings are connected by concrete paving with flush curbs which allows the blown sand to pass over and not collect on the paths.

All the windows and doors are steel and except for cupboard fitments and sliding blackboard units, virtually no timber has been used in the school.

The last and perhaps most noticeable feature of the design is the use of cheerful colours throughout—externally contrasting with the random rubble stone work and internally between differing colours.

The cost of this College is £84,000, although during 1956 further extensions of classroom units will bring the price to around £100,000. The Contractor for this school was an Italian firm.

The Queen Elizabeth Hospital

This new Civil Hospital which is also on the beach at Khormaksar and for which the Queen laid the foundation stone, will not be completed for another year or so but already the structure is well above ground level. The siting has necessitated extensive piling and heavy reinforced concrete foundations and now the reinforcing for the concrete work is rapidly growing to third floor level. The design is in the form of a cross with a central portion dominating the wings and the whole is air-conditioned—mainly because of the blown sand nuisance as well as the humidity. It will contain 265 beds for patients from both the Protectorate and the Colony and when complete will provide the most up-to-date facilities.

Tuberculosis and chronic diseases wards will, eventually be housed in separate buildings situated in the grounds of the hospital. Facing toward the sea, blocks of flats for the nursing staff and houses for doctors are now under construction, so that when all is completed the hospital will form a completely self-contained unit. Contract price represents a cost of about £3,000 per bed.

Architects: Harrison, Barnes & Hubbard, Engineering Consultants: Oscar Faber & Partners. The main contractor is George Wimpey & Co. Ltd.

It remains to be seen how long this spate of building will continue in the Colony. Government building is catered for in a programme of development, but perhaps the prosperity of the Colony is best measured by the activities of private building owners and speculators who take up plots for future development as soon as they are made available.

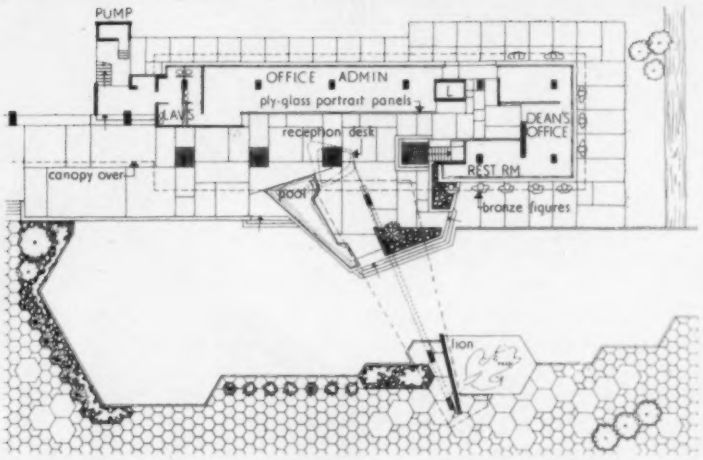
A model of the Queen Elizabeth General Hospital, Aden, now under construction on a site at Khormaksa, not far from the Airport.

LIBRARY BUILDING

Engineering College

University of Rangoon

architects:
RAGLAN SQUIRE & PARTNERS



GROUND FLOOR

A BUILDING was required to accommodate the College Library (35,000 volumes), Dean's Room, General Office Administration, Board Room, Students' and Staff Common Rooms and water storage for the whole of the Engineering College.

Design

The plan form of a traditional tropical bungalow consists of an inner central living area surrounded on all sides by a deep veranda, which serves to protect the living area from sun and rain. Sometimes these verandas are partially enclosed by grilles which tend to disperse the sun's rays, thus making the veranda itself a more useful extension of the inner living space. The original conception of the Library Building was derived from this simple prototype; a rectangular area sealed off by glass screens and surrounded by an open grille. This theory was applied to all the planning elements (with the exception of the office accommodation on the ground floor) organised on four floors, a reticulated grille pattern being stretched over the entire superstructure.

A decision to abolish the enclosing glass screens protecting the inner areas and rely for sun and rain protection on the grilles led to the final grille form of the deep coffin-shaped unit with a central hexagon glazed and the two small fan-shaped openings unglazed. Permanent cross ventilation was permitted by the un-glazed openings.

The pattern of the in-filling Plyglass panels is based on the traditional folk patterns of the Shan States in Northern Burma, and has been designed to emphasise the essentially diagonal character of the grille.

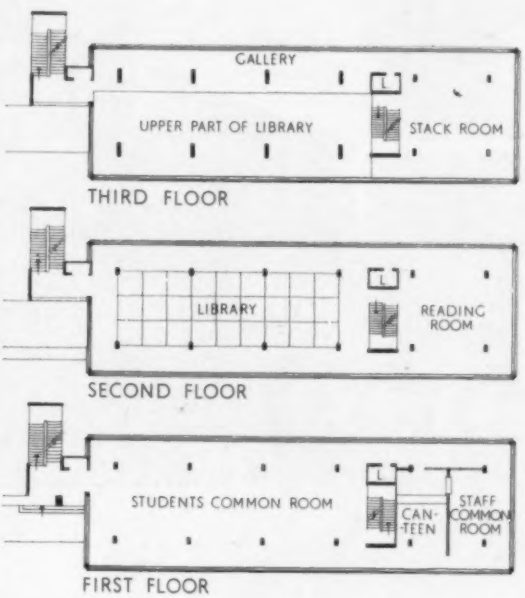
The Library itself is provided with teak book-stacks with slatted shelves to permit the free passage of air circulated by heaters in the bottom of the stack.

Structure

The structure consists of multi-storey reinforced concrete portal frames with cantilever arms. Flat slabs span 21ft 8½in from frame to frame. Grille walls consist of pre-cast coffin-shaped concrete units, 5ft high and 10in deep, resting on a continuous edge beam at first floor level. Coffin units are provided with holes at intermediate bar levels through which rods are passed for fixing to corner posts. The grille is held back at floor levels by metal fixing devices which hook over rods threaded through the coffins. (See detail sheet.)

Finishes, etc.

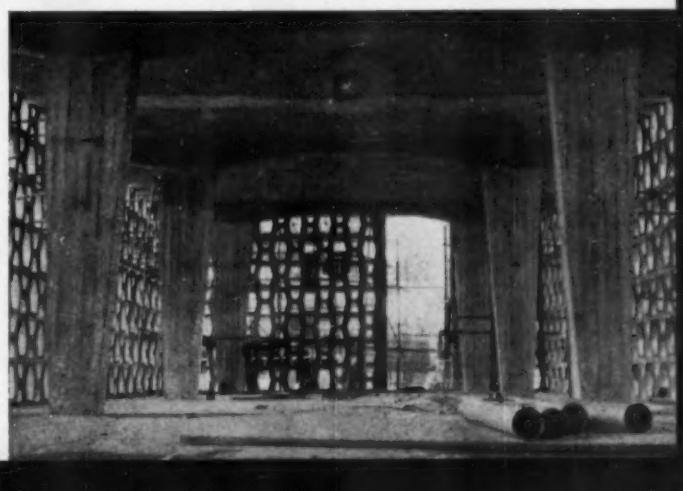
All structural concrete work, including coffins, is to be left exposed, shuttering to columns and slabs having been designed to form simple patterns on the concrete.



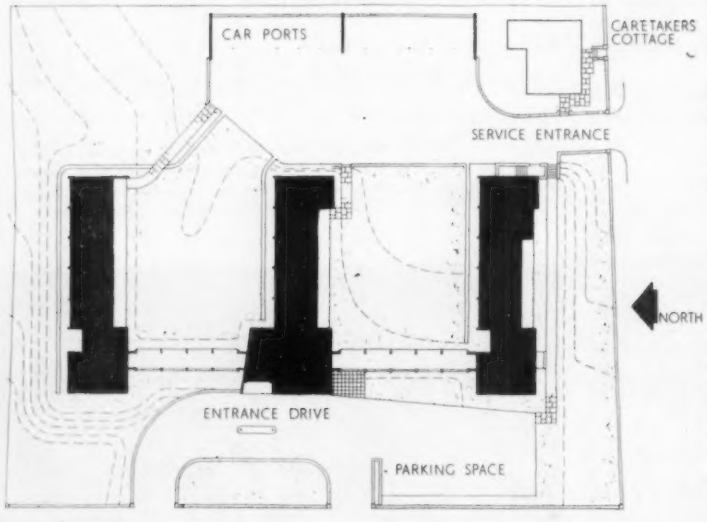
General Contractor:
TAYLOR WOODROW CONSTRUCTION LTD.

Subcontractors:

Acetylene Gas Plant and Apparatus: Thorn & Hoddle Ltd. *Electrical*: General Electric Co. Ltd. *Glass Laminated*: Plyglass Ltd. *Granite Merchants*: Anselm Olding & Son, Ltd. *Lifts*: Marryat & Scott Ltd. *Paint*: Goodlass Wall & Co. Ltd.



Entrance porch



SITE

MINISTRY OF AGRICULTURE & LANDS

Kingston, Jamaica

architects:
NORMAN AND DAWBARN

assistants:
W. BURNES, D. DE LISLE,
R. WILSON, B. TONET

quantity surveyors:
WIDNELL & TROLLOPE

THE site for this building lies in part of Kingston's late 19th century residential district. The area had been scheduled, some years before, as suitable for new Government offices. To the West of the site lay an area of some twenty acres of barren land. In the earlier town plan this land was to be a park, and on the death of King George VI it was decided to carry out this scheme and lay out a memorial park, which was subsequently opened by the Queen. The Ministry of Agriculture with a total floor area of about 20,000ft sq was to be the first step in forming the new Government offices.

The site selected for this building was the grounds of a home, now derelict, with no garden remaining except for some fine trees amongst which were lignum vitae, coconut palms and mangos. The position and value of trees in the tropics together with sun shielding and prevailing breezes dictated the plan.

The cost of the building obviated any form of mechanical ventilation, and it was decided to build three separate wings of three storey offices connected by covered ways.

Locally produced building material is limited to cement and its by-products and timber and gypsum with all other materials of consequence imported, the construction therefore had to be of the simplest order.

A reinforced concrete frame (designed to withstand earthquakes and hurricanes) with pre-cast floor and roof units was used in the same way on each of the three blocks.

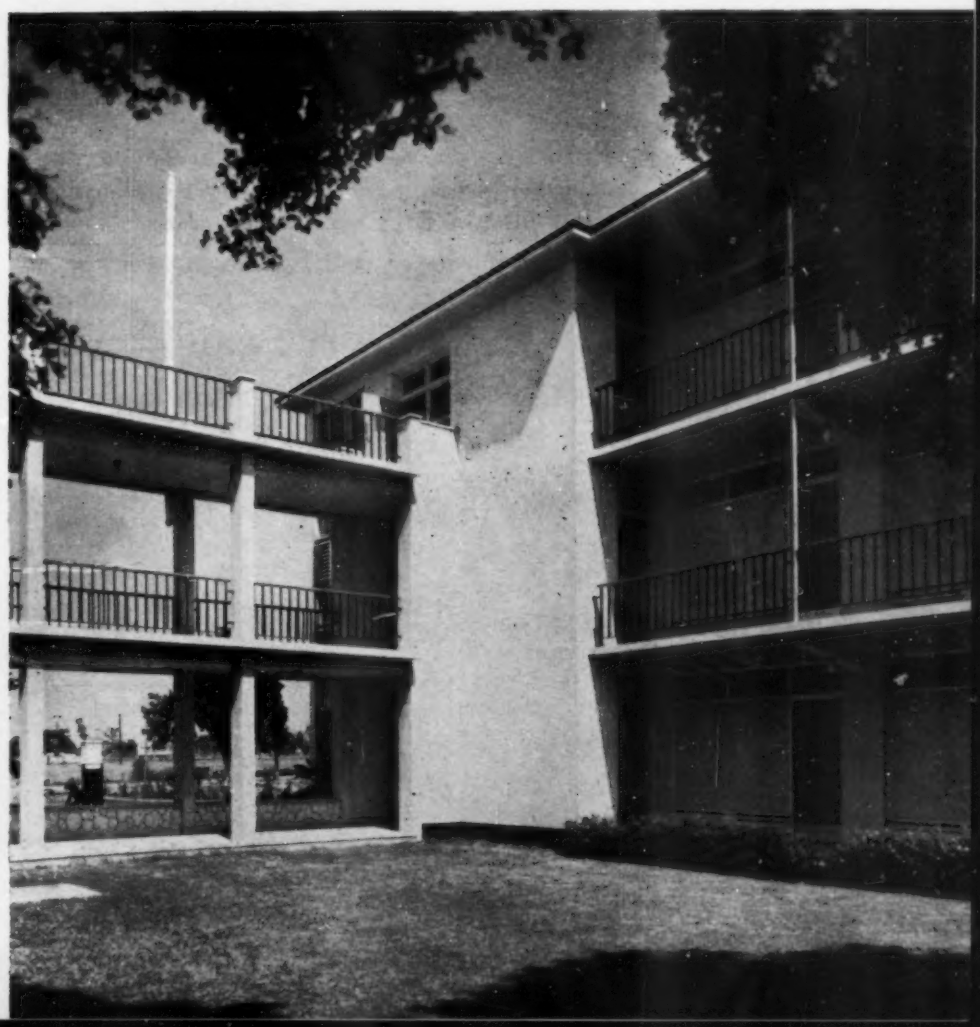
Planning

The plan of each block provides for offices on the North side. To South is a wide verandah providing sun shielding and access and at the West end is the staircase and lavatories plus the link to the covered ways between blocks.

All movable office partitioning are units 5ft long by 6ft 6in high, the bottom 3ft big double-sided shelves, and the upper part obscured glass.

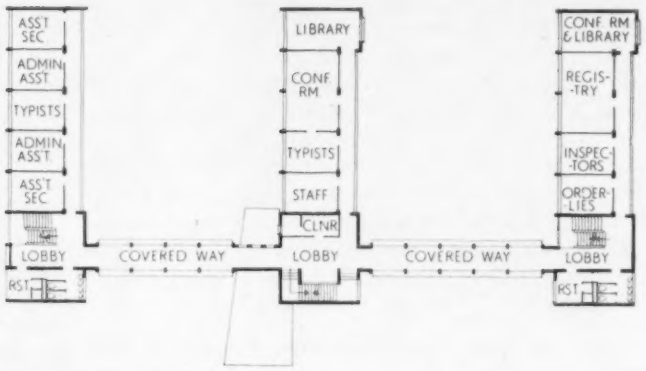
Office walls on to the access verandahs are of prefabricated timber panels, with continuous glass ventilators above door heads and fixed louvres at skirting level. All other external walls are constructed of hollow concrete blocks, rendered externally and painted with a coloured cement paint. The West end walls facing on to the main road are patterned with 6in x 1in ceramic tiles.

All floors are of locally made coloured cement tiles. Ceilings are of local gypsum panels, and a variety of Jamaican hardwoods has been used on stair treads, handrails and other places.

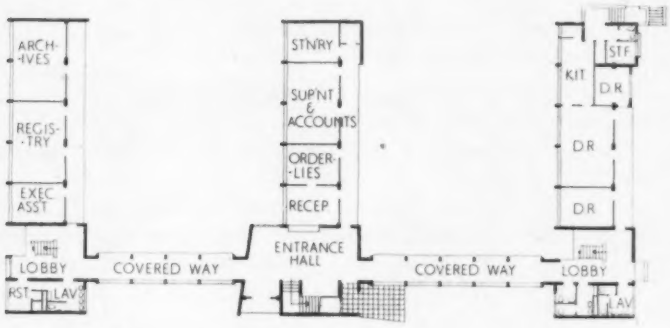


The block to north of the central wing showing "open" ways connecting the three

Side view of south block



UPPER FLOOR



GROUND FLOOR SCALE: 1 IN = 24 FT

Jamaica's Ministry of Agriculture

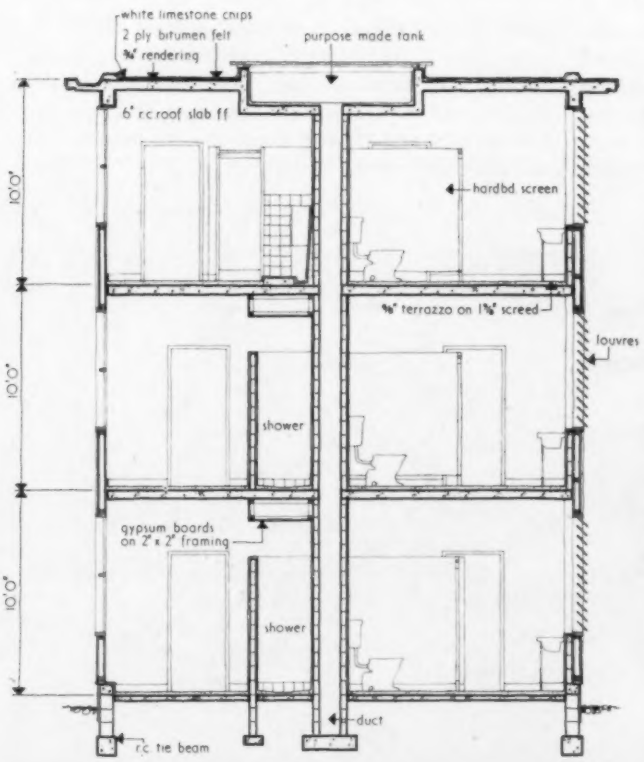
All offices face north. To south, they are connected by open verandas which give shelter and lead into covered ways. This picture below shows entrance porch. Walls facing road are faced with ceramic tiles.

Main Contractors:
HIGGS & HILL LTD.

Sub-contractors:
External Tiles: Richards. *Ironmongery*: James Gibbons. *Kitchen Equipment*: G.E.C. *Lettering*: The Lettering Centre. *Light Fittings*: Troughton & Young and G.E.C. *Paint*: Bergers. *Partitions*: Weyroc. *Sanitary Fittings*: Ideal Standard. *Windows*: Crittalls.

Another view of the south block, taken from the drive way; Lavatories are ventilated by louvres. The section below shows the services duct which runs up behind W.C.s and showers

SECTION. SCALE: 1 IN = 8 FT



Main entrance hall

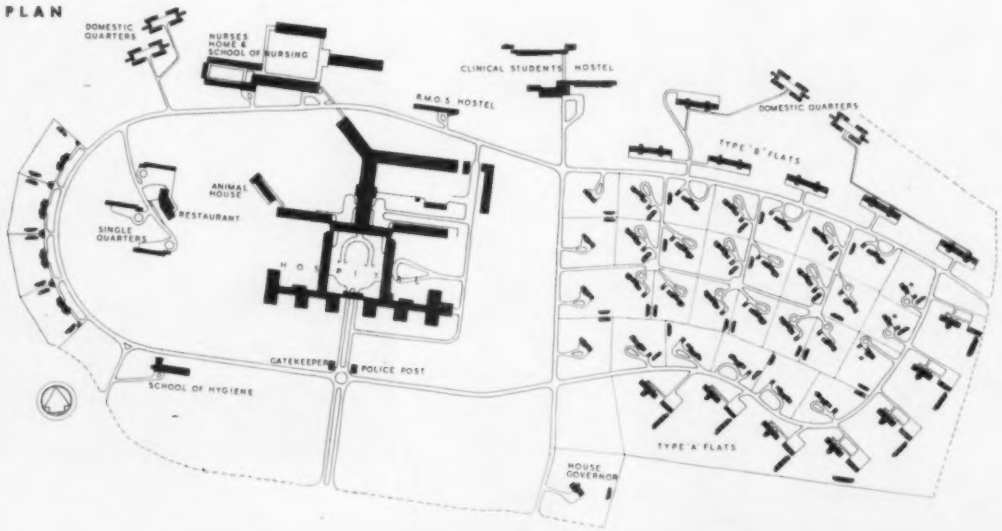
Entrance to clinical students' hostel

UNIVERSITY COLLEGE HOSPITAL, IBADAN

architect for hospital: W. H. WATKINS GRAY & PARTNERS
in association with: P.W.D. Federation of Nigeria
chief architect: GEORGE STOUT

NIGERIA'S first teaching hospital — the construction of which is now well advanced—is situated on a 187 acre site on the N.E. side of Ibadan, the capital of the Western Region of Nigeria. To east and west, within the site, are two hillocks. It is on the eastern slope that the already completed housing estate (Jan. '53) which provides quarters for 73, has been built. Here senior administrative, medical, nursing and technical staff will be accommodated. Hostels, and medical schools are being, and have been, built to west and between them and the housing estate is the hospital itself.

SITE PLAN



The most important factor influencing the design of all the buildings is the climate. Cross ventilation was essential and as much wall surface as possible had to be protected from the direct rays of the sun—by shades, canopies and *brise soliels*. Large windows, having a maximum control of ventilation, were used and generally they are glazed because the torrential rain of the region is often accompanied by high, driving winds.

Methods of construction were dictated by the available materials—sand and stone. Floors, columns and slabs are R.C. and walls are generally cement blocks. Pitched roofs have either asbestos sheet covering or, where they are single span and low-pitched, aluminium.

Natural stone has been well used in many places to contrast with large areas of coloured plaster. As skilled labour is at a premium, finishes were kept to a simple form. However, it has been found that, with European supervision, very high standards of finish have been achieved.

Several methods of construction used were completely new to Nigeria and the experience gained in the erection of the houses and staff quarters was put to good effect when construction of the main hospital began (late '53).

Hospital

The plans show the layout of this building which will have space for about 500 beds and house the most advanced equipment in operating theatres and departments used for pathology, X-Ray and research. The out-patients' department had to be planned on a large scale to cater for the considerable number of patients who will use the hospital.

Advantage has been taken of the open site, to spread the building in long wings so that air can circulate freely around, and through, the buildings.

Staff flats

These are in three main types.

"A" Type blocks are 3 storeys in height with 6 flats —3 each side of a central staircase. Flats are 2-bedroomed.

"B" Type blocks are 4 storeys in height with an open ground floor for garages. There are 12 flats to each block—3 on either side of 2 staircases. Flats are self-contained and have one bedroom.

Single Quarters are in 3, 4-storey blocks with the ground floors left open as garages plus a restaurant and common room. There are 12 flats to each block, entered from access corridors with a staircase at each end of the block. Each flat has a living-room, subdivided by a large wardrobe and bookcase fitment to form a bed recess, a small kitchen as meals are intended to be taken in the restaurant (see plan), and a bathroom and large balcony.

Clinical students' hostel

This building will be 2, 4-storey blocks (one only has been built to date) containing 120 single bedrooms entered from access corridors. Each room has a private balcony. Movable screens divide the dining room from the common room. A library and recreation room are also provided. Floor finishes are colorcrete in the bedroom and terrazzo in the common room.

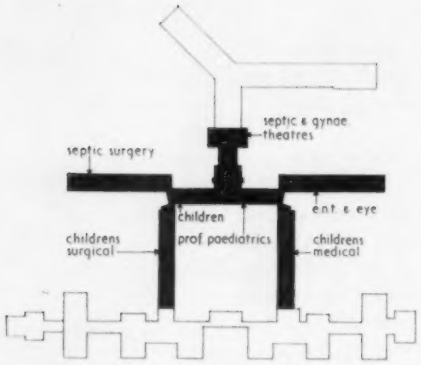
School of Nursing

The building is not yet finished and is to house a school and 3 blocks of bedrooms accommodating 380 student and staff nurses. The school is single storey built around a courtyard and has a library on the first floor over the entrance hall. Floors are terrazzo with cork in the library.

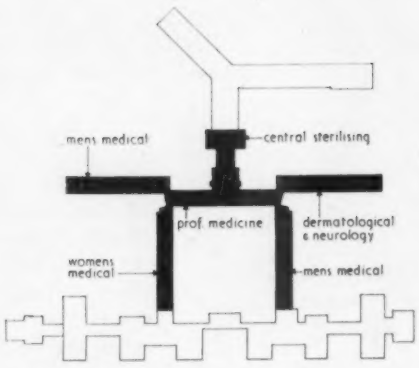
All bedrooms have balconies and the various blocks are linked together by covered ways.

The Resident Medical Officers' Hostel and School of Hygiene buildings are not yet completed.

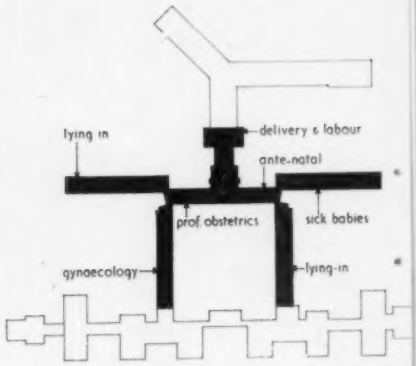
Perspective of hospital from south



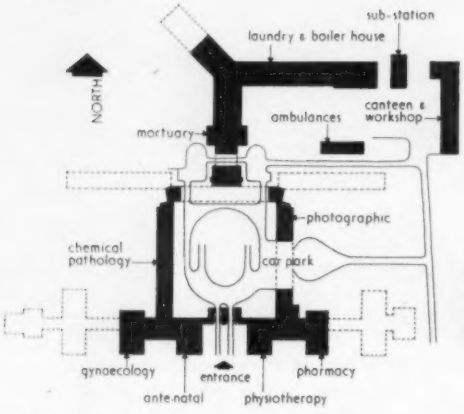
SECOND FLOOR



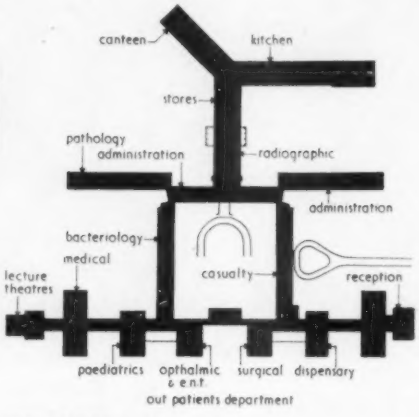
THIRD FLOOR



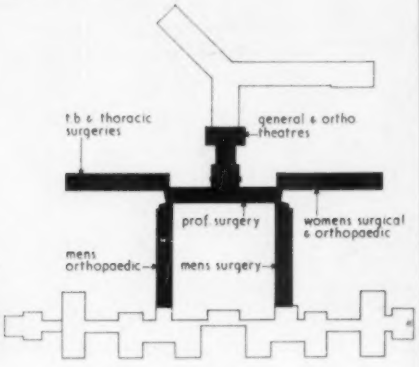
FOURTH FLOOR



LOWER GROUND FLOOR



GROUND FLOOR



FIRST FLOOR

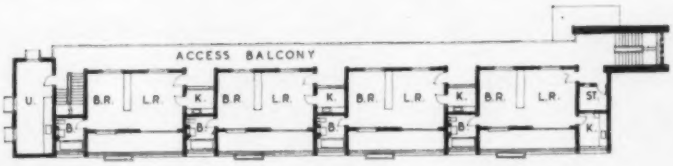
HOSPITAL FLOOR PLANS:

Ancilliary Buildings to U.C. Hospital

by the P.W.D. Federation of Nigeria
chief architect: GEORGE STOUT.
architects: J. MURRAY and K. P. SMITH

Architects in charge hospital:
A. T. OWEN
R. F. REEKIE
K. S. O'CONNER

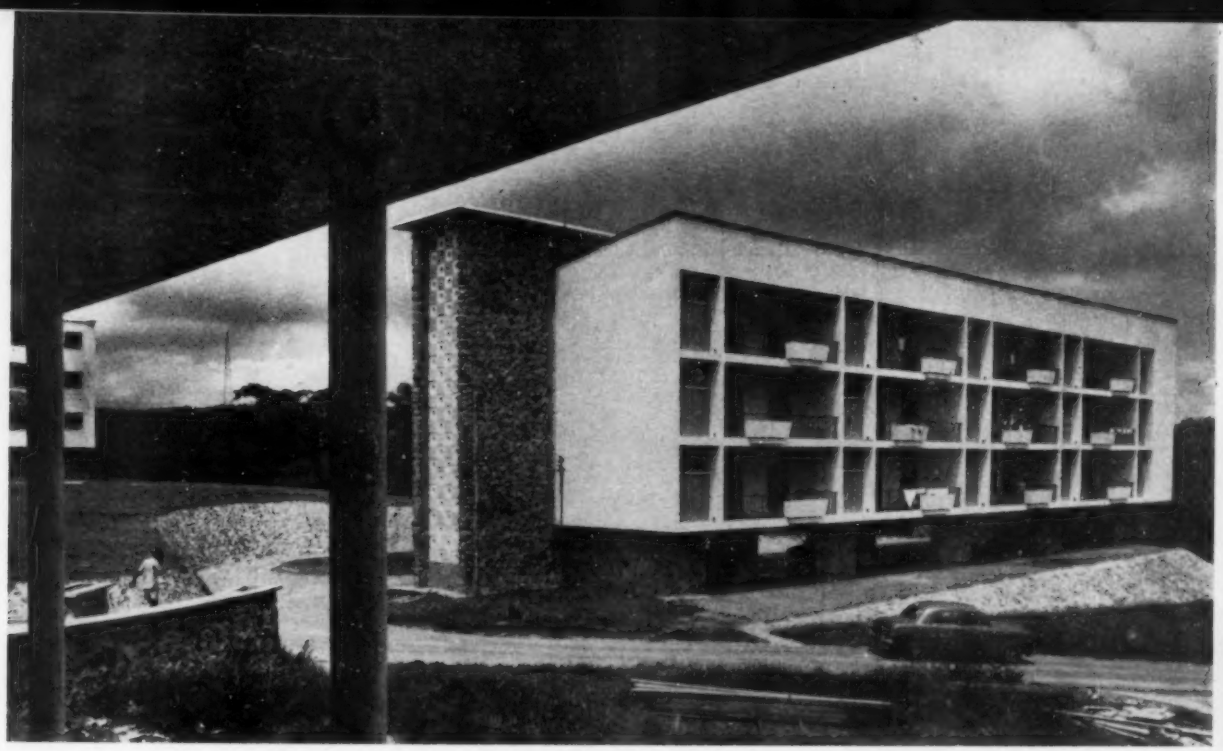
Staff nurse's bedroom



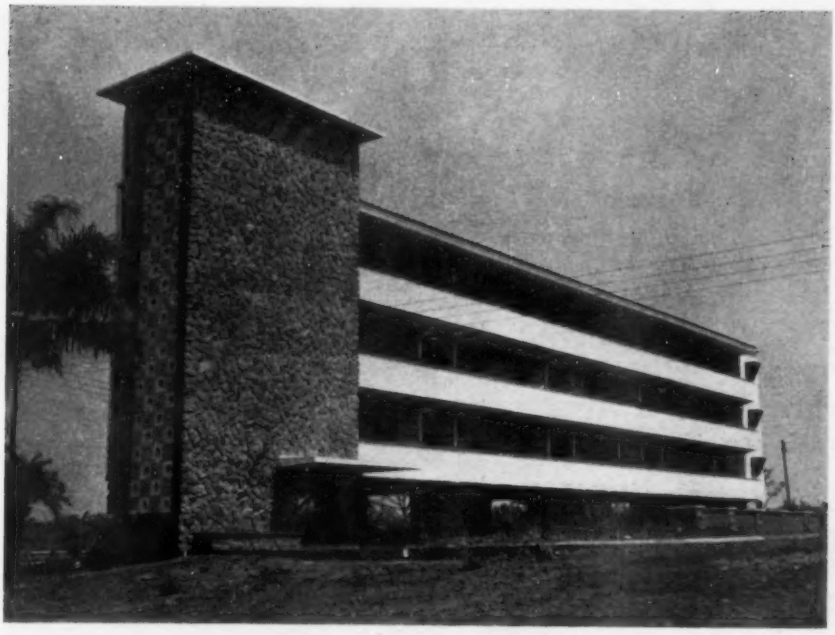
UPPER FLOOR

GROUND FLOOR

SISTERS' FLATS



Two of the single quarters blocks. 12 flats in each.



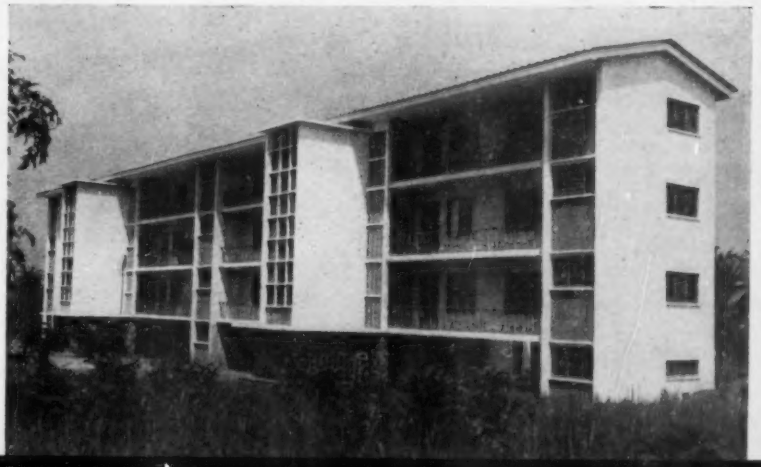
S.E. Elevation of type B flats

consulting engineers:
OVE ARUP & PARTNERS

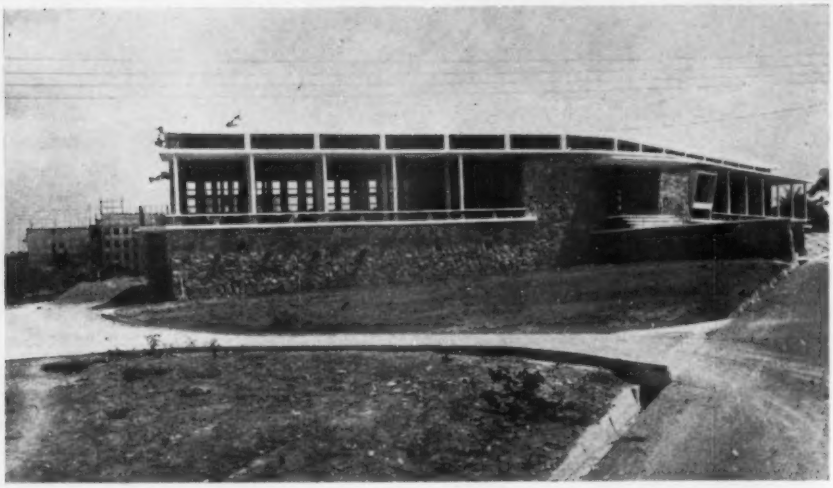
mechanical services consultants:
ROGER PRESTON & PARTNERS

electrical consultants:
BARLOW, LESLIE & PARTNERS

main contractor:
COSTAIN (WEST AFRICA) LTD.

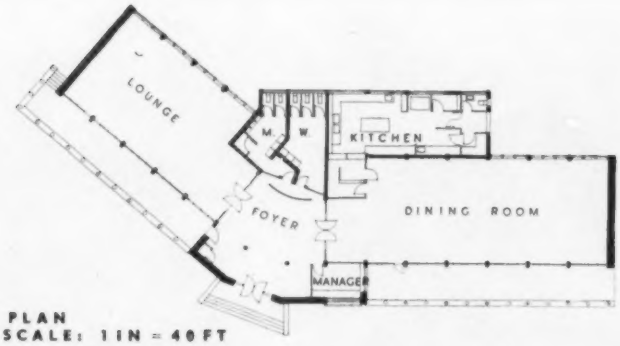


University College Hospital Ancilliary Buildings



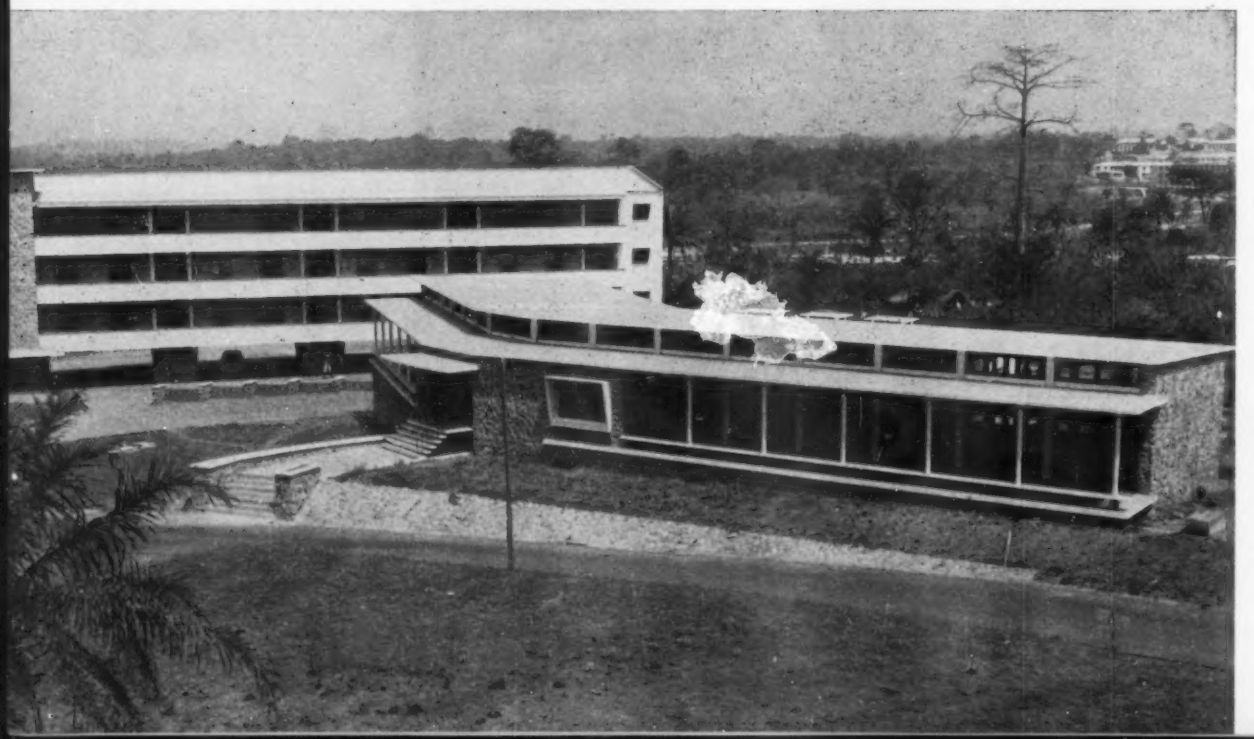
From west

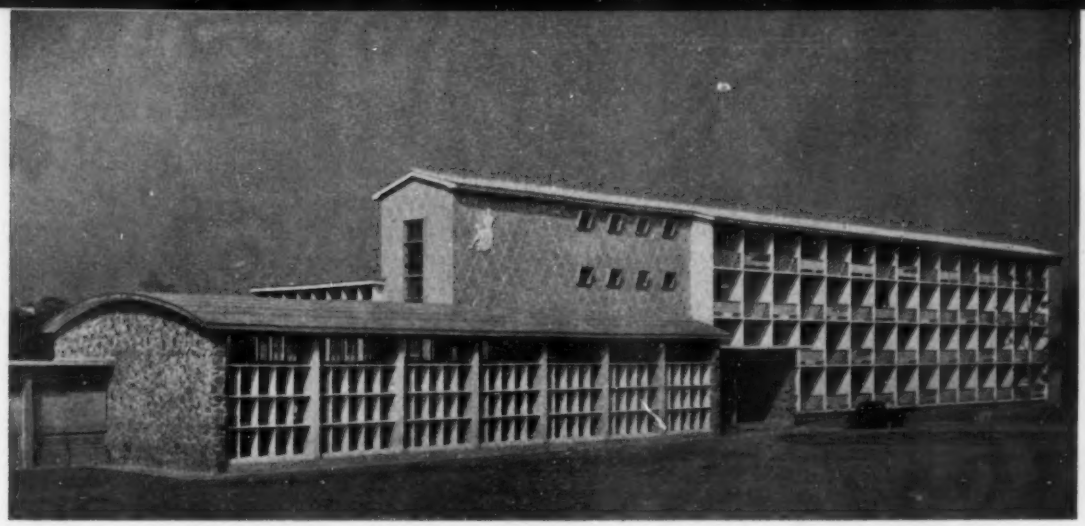
SINGLE QUARTERS
RESTAURANT



PLAN
SCALE: 1 IN = 40 FT

Picture from roof of one hostel looking north towards another



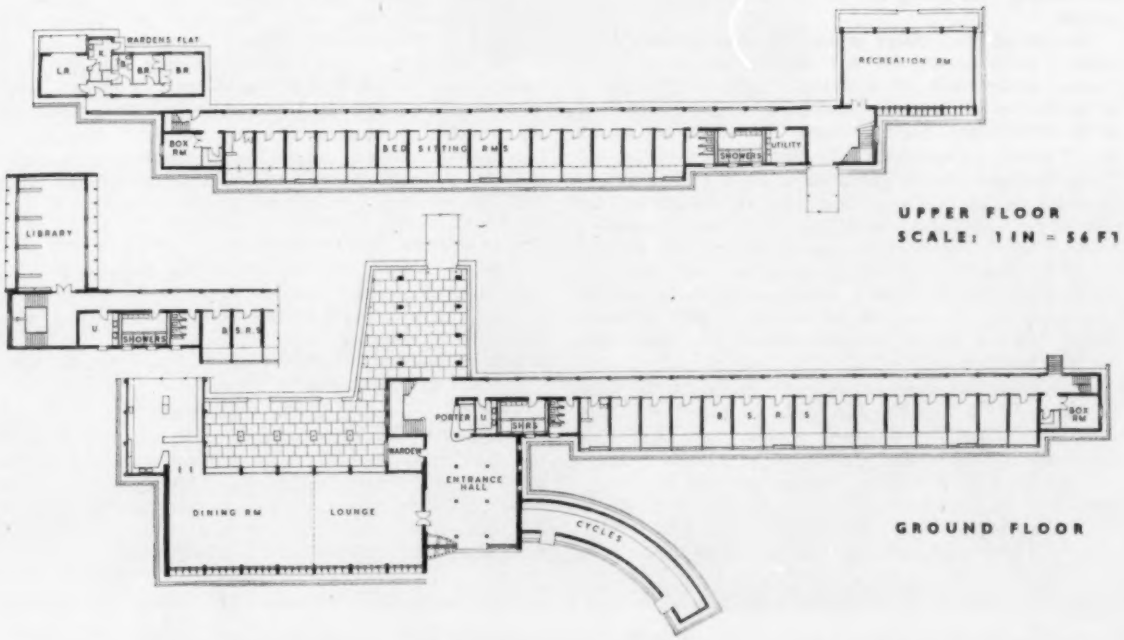


South-west elevation with common room in foreground

CLINICAL STUDENTS' HOSTEL

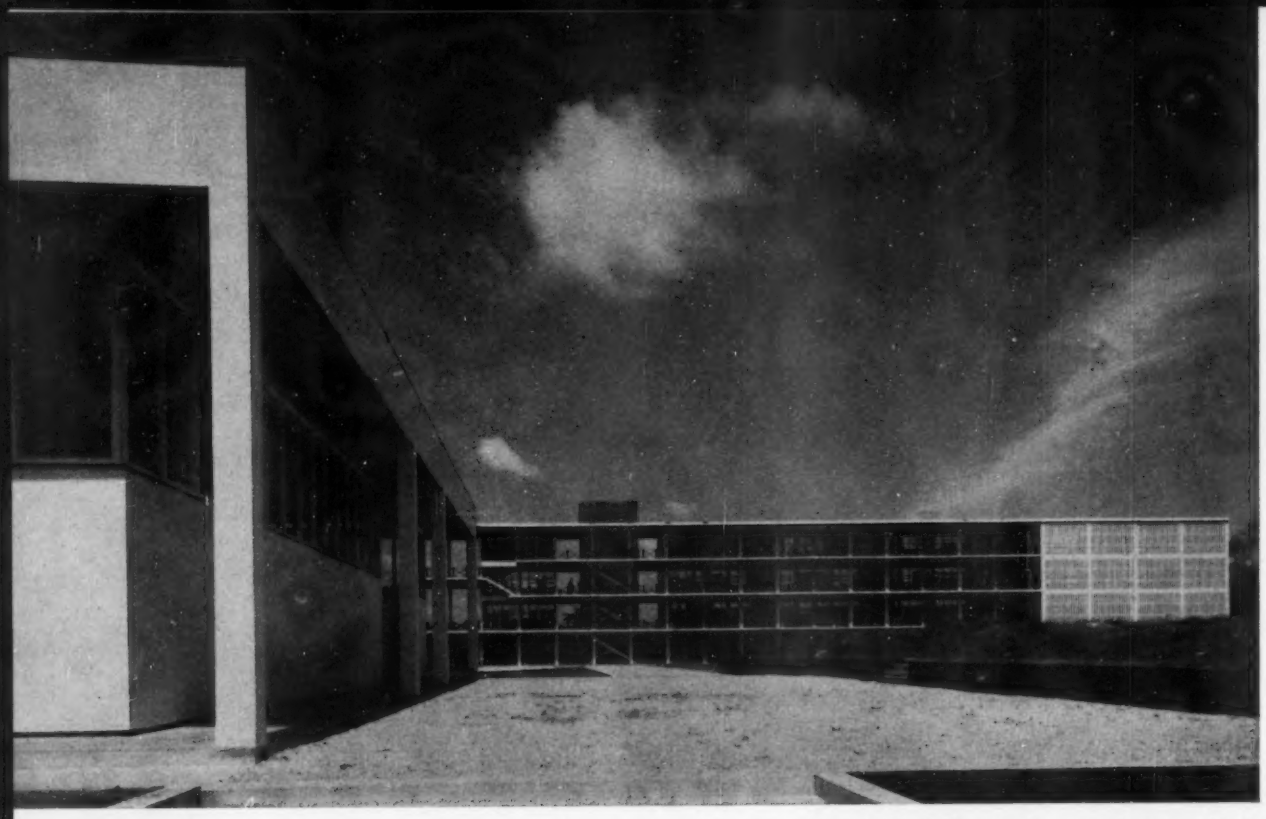
Common room ▼

North-east elevation



UPPER FLOOR
SCALE: 1 IN = 56 FT

GROUND FLOOR



General classroom block from podium to pharmacy block

KUMASI COLLEGE OF TECHNOLOGY

architects: JAMES CUBITT, SCOTT & PARTNERS

KUMASI is the capital of the Ashanti. It lies approximately 7 degrees north of the Equator and by African standards is a big city. It lies on hilly, densely wooded country and has an oppressive climate with high relative humidity and sun temperatures as hot as anywhere on the Equator. It is in a sense cosmopolitan like most big African cities and there is a considerable and relatively free coming and going of Africans of many tribes and nations.

The site of the College is some 2½ square miles, lying about 4 miles outside the city, south of the main Accra-Kumasi motor road. It is divided diagonally by a valley in which runs a stream dignified by the name River Wiwi, which runs roughly north to south. This valley and stream are of major importance in the development of the site.

The first task was the allocation of zones for the various activities of the College; teaching; administration and ceremonial; students' residence, staff and labourers' housing, etc. This and the sketch designs for the first major building, the engineering workshops, had to be prepared from existing surveys. These proved to be remarkably accurate. It was found necessary only to make small revisions to the scheme, which has since been broadly adhered to.

There were two major architectural problems; the selection of suitable sites for the main groups of buildings, and the siting of the numerous smaller individual buildings, such as staff houses. In both cases considerations of orientation and prevailing breezes are of prime importance. It is essential both to take advantage of the light prevailing southerly breezes and to prevent the S.E. and S.W. sun from shining into the buildings. These breezes are more effective on hill tops or the ends of valleys, hence the need to find sites on the higher land, (much of the best of which was already occupied), and in the case of the main groups to find suitably large areas of land to take such groups.

Development

The development plan envisaged 5 stages. 1. The existing "temporary" buildings. 2. The major part of the main teaching area, labourers' quarters and some staff houses. 3. The remainder of the teaching buildings (including the library) and the first part of the students' residential area, and the Examination Hall (Acropolis). 4. Completion of the students' residential buildings and staff housing. 5. Ceremonial buildings, amphitheatre, major planning, etc.

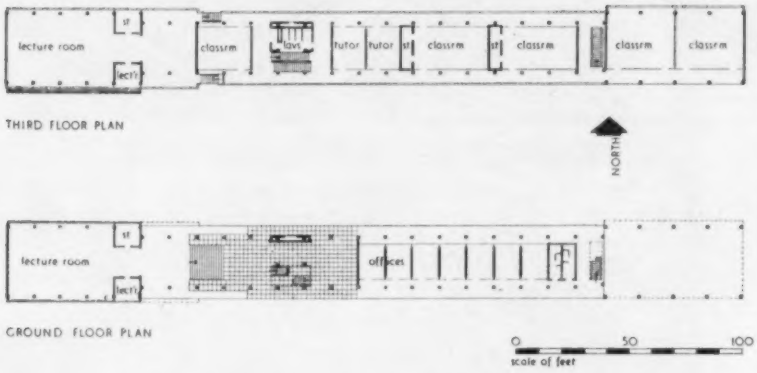
Owing to local economic and political factors only those buildings on stage 2 have been carried out to date.

Engineering Workshops and Laboratories

These workshops were the first of the permanent buildings to be completed, and are intended for the training of Gold Coast students in engineering and building technologies, a growing need brought about by rapid industrialisation as demonstrated by the Tema Harbour and Volta River Projects.

The circulation is generally external (see Plan p. 57) and a covered way was provided around the perimeter beneath the Y-beam overhangs. The glazed wall above this is shielded by fixed louvres of anodized aluminium faced plywood. Calculations show that, allowing for a life of 15 years only, the initial cost will be easily offset by saving in maintenance. The wall below the canopy con-

Continued on p. 58

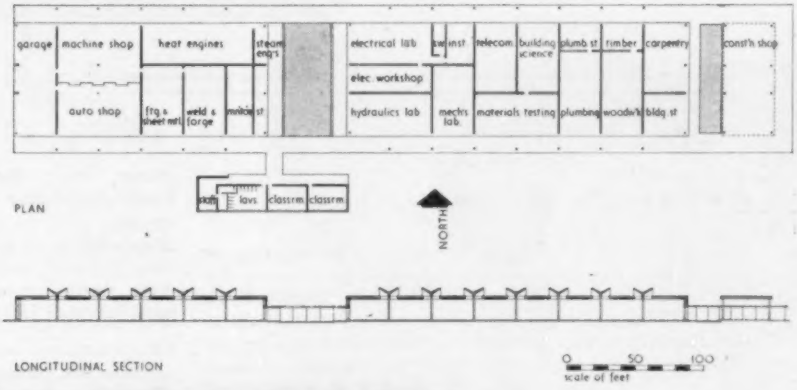


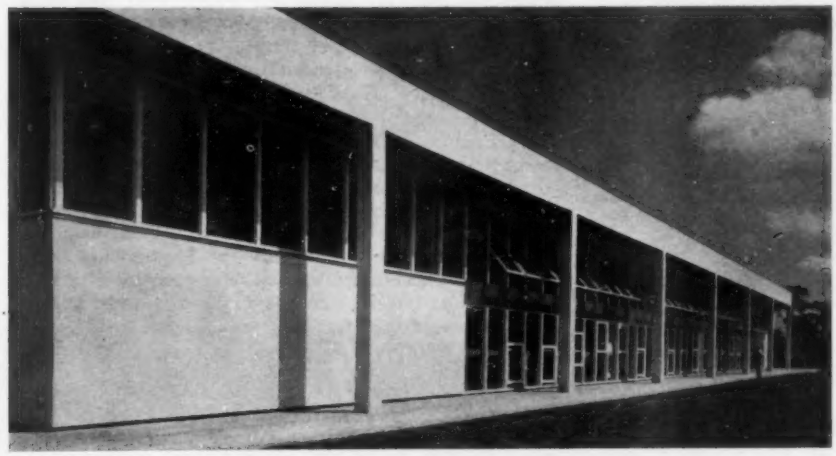
◀ CLASSROOM BLOCK

The large entrance concourse was provided under cover to allow for a large number of students arriving or leaving the building at any one time, and also to provide a protected area for assembly at break times.

WORKSHOP BLOCK ▶

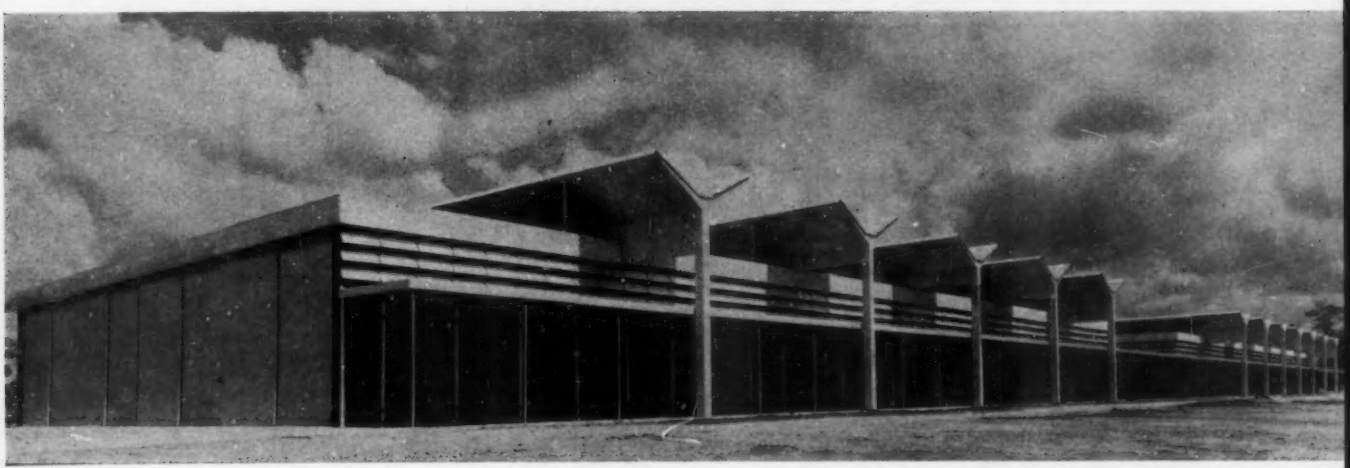
The construction consists of a series of Y-beams at 30-foot centres spanning across the building on single lines of columns. The Y-beams provide a strong structural shape, as well as a means of clerestory lighting and ventilation over the whole floor area.

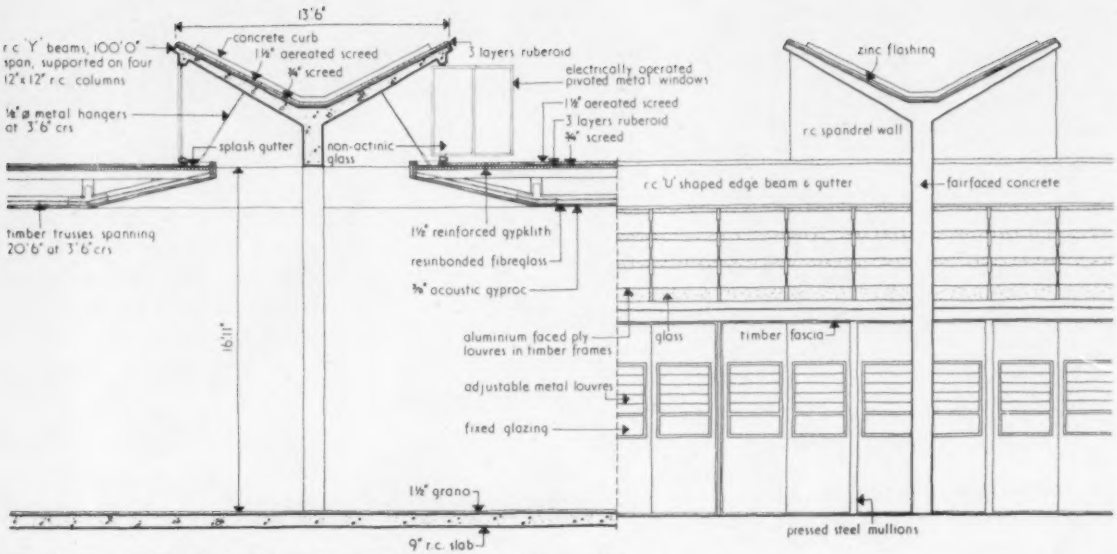




◀ *Pharmacy block*

Workshop block





DETAIL. WORKSHOP BLOCK. SCALE: 1 IN = 8 FT.

Kumasi Technical College

sists of rows of continuous pressed steel doors hung on pressed steel mullions making it possible to open up the entire side of any laboratory to catch the breeze. These doors have a glazed panel and an opening of small adjustable louvres, so that in those positions where benches are adjacent to the doors, light will be admitted at bench top level, with some ventilation when it is necessary to shut the doors during rain. Only one part of the cladding of the building departs from this treatment, and that is the west end, which has full height sliding garage doors, clad in anodized aluminium faced plywood.

Pharmacy Building

This large single storey block contains laboratories for teaching a 3 year course in practical pharmacy to 72 students. The budget figure is £60,000 + £11,000 for fittings. It forms the central mass in the group, running east to west. Maximum natural ventilation is provided by giving all laboratories an outside west or south wall; the 16ft ceiling height assists air flow across the building.

The R.C. structure is kept independent of all walls. Columns at 25ft centres, carrying deep transverse beams form a colonnade on the north and south sides. The mezzanine floor is carried on a double row of internal columns. The main transverse beams are all upstand to provide a flush soffit for visual and air-flow reasons. The walls to the lavatory blocks at the west end are of load-bearing block, and are roofed by a continuation of the mezzanine slab.

General Classroom Block

This building contains classrooms, lecture rooms and offices and tutorial rooms of different sizes and heights. For economic considerations the building was planned to be carried out in three stages, of which two and three have been built:— Stage 1. Big Lecture Halls. Stage 2. General Classroom accommodation. Stage 3. Six additional Classrooms.

The building is sited at the north edge of the general teaching area, where the ground slopes considerably away to the west. Its long axis runs east to west to allow for maximum breeze penetration and sun protection. The duplication of types and number of rooms indicated 4-storey building. The sloping site allowed for mezzanine lecture halls at the west end, since these had to be of greater height than the other rooms. The rooms are placed in a central core, served on both sides by externally opening galleries which assist as sun-breaks. Vertical circulation is by a double scissor staircase rising from the main entrance, and subsidiary staircases at each end. All cross walls are solid and all infilling walls consist of hand-operated metal louvres, designed by the architects.

Engineering and Physics Block

These two buildings contain lecture rooms and drawing offices for teaching Mechanical Engineering, Surveying, Building Technics and like subjects. They are sited on the south side of the raised terrace—east of the Pharmacy Block. The site is intended to contain two additional future laboratory blocks, and slopes away steeply to the south.

The Engineering Building is two storeys high with open balcony access to the south. The ground floor gallery is raised above the forecourt, except for the entrance to the east end lecture room which is stepped. This building is intended to be linked to a future physics building, also two storeys high, by a bridge. The Physics Building is intended to contain laboratories, dark rooms, etc., on the first floor and tutorial rooms, etc., on the ground floor.

The construction of both buildings is reinforced concrete frame with infilled walls similar to those on the main classroom block.

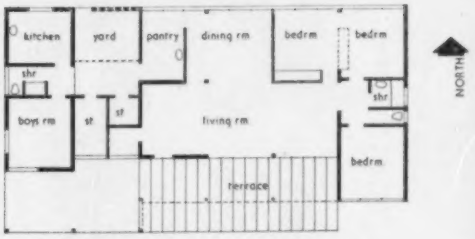
Housing

The programme was to provide type houses for the College and for the Education Programme and to house the teaching staffs. Accommodation varies accordingly. Each plan takes into consideration orientation and breeze. For the College there are:— Senior staff houses, type A and B, junior staff houses and junior administration staff houses. The Education Programme provides for a headmaster type house, a senior staff house, a junior staff house and subordinate staff houses.

Main accommodation consists always of living room, kitchen, a varying number of bedrooms, and bathroom, and in some types, pantries. There are separate kitchens and boys' quarters and garages.

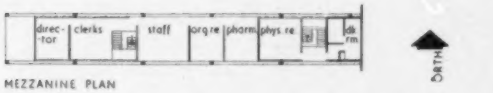
The houses, on the K.C.T. site, are dispersed over quite a large area, and are grouped into their respective types. These houses form small formally informal groups with planting and service roads to them. The subordinate staff houses are planned in long terraces adjacent to the roads.

Pharmacy block

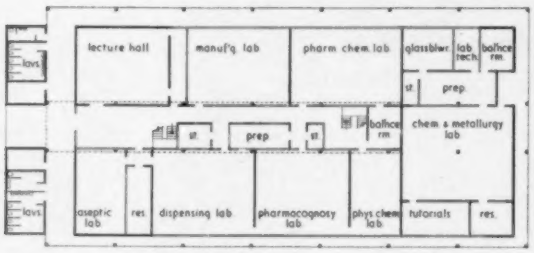


HOUSE PLAN. SEE PICTURE

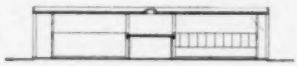
General classroom block



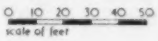
MEZZANINE PLAN



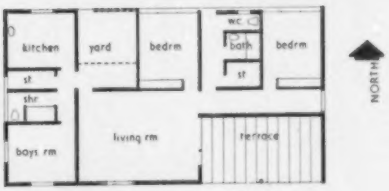
GROUND FLOOR PLAN

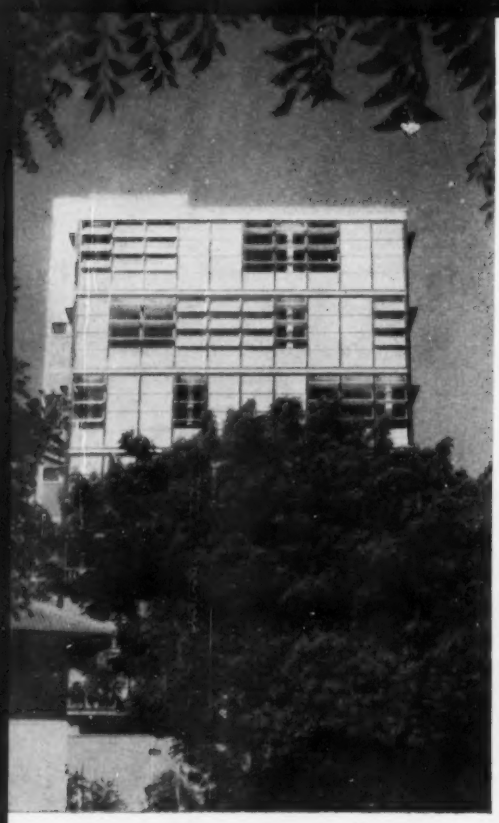


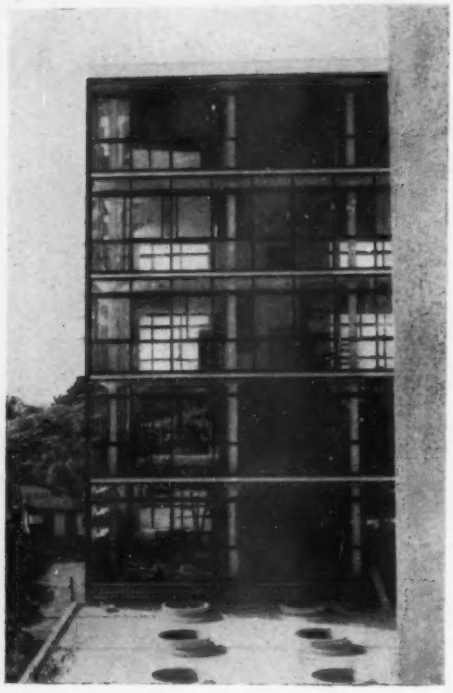
CROSS SECTION



PHARMACY BLOCK







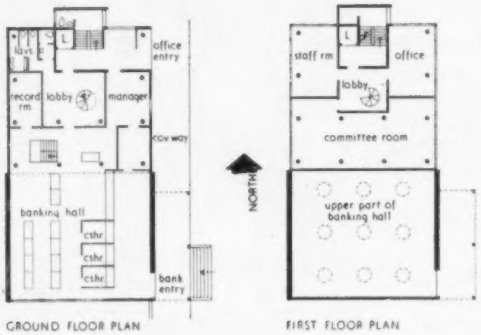
Office Group Accra

architects:
JAMES CUBITT & PARTNERS

consulting engineers:
OVE ARUP & PARTNERS

Two tiers of the offices over banking hall.

CO-OP BANK

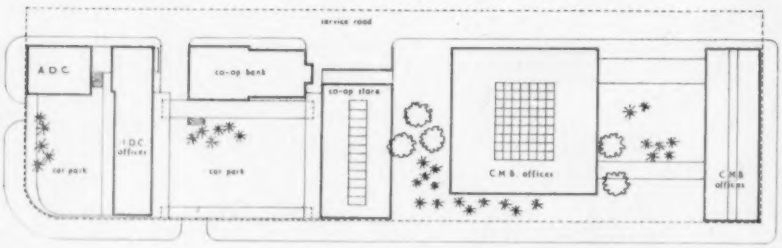


GROUND FLOOR PLAN FIRST FLOOR PLAN

THE buildings face Station Road, one of the two main arteries of Accra, which is rapidly developing into the centre of the commercial part of the capital. It is a street running north from the old part of the town and the shore, gradually rising for about a mile and then dipping down, leading, through the suburbs, north into the interior. On the crest of the hill, a site of approximately 500 feet frontage and 150 feet deep was allocated to a group of offices to be developed for various semi-Government organisations.

General design

The architects from the outset considered the development of the site as a whole and their aim was to achieve

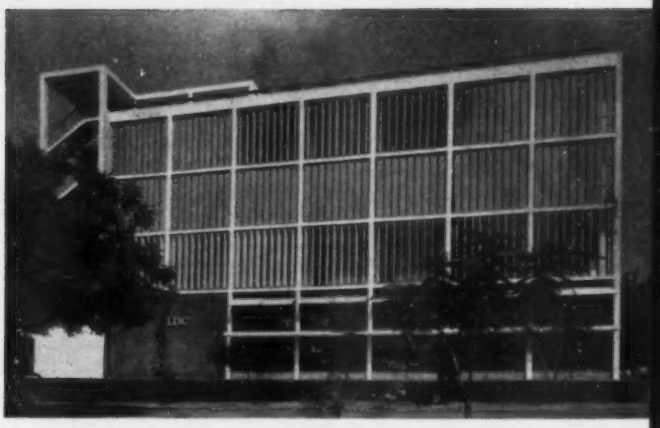


SITE PLAN

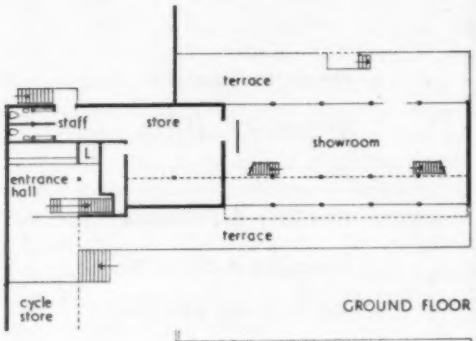
Metal louvres

I.D.C. OFFICES

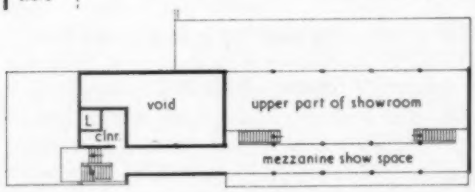
West staircase



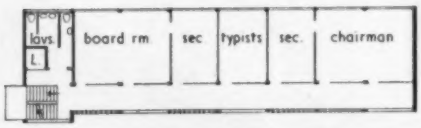
From car park



GROUND FLOOR



MEZZANINE LEVEL



TYPICAL UPPER FLOOR

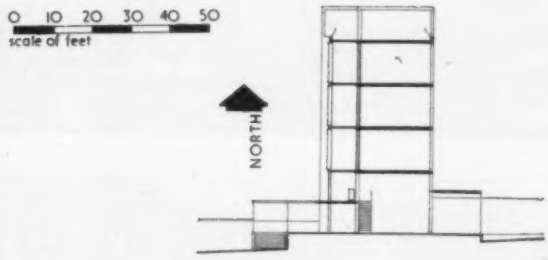
Main Contractors:
African Finance and Investment Corporation
A. Lang, Ltd.

composition. With a fast developing town a particularly worthwhile and not always attainable aim.

Although it was not possible to secure architectural control over all the projected buildings, the group now developing consists of three tall buildings and fulfils to a large extent the initial planning ideas. The southern half of the site is nearing completion and on it are the offices of the Agricultural Development Corporation, the Industrial Development Corporation and the Co-operative Bank. A fourth building, the Co-operative Store, may be erected as planned.

The Cocoa Marketing Board offices, at the north end of the site, is not being designed by the architects, but was originally planned to complete this development.

The I.D.C., Co-operative Bank and Store were grouped to form a courtyard with access to the Bank and Store and the ground floor showrooms of the I.D.C. The I.D.C. and A.D.C. buildings have their own access off a newly planned road at right angles to the main street.

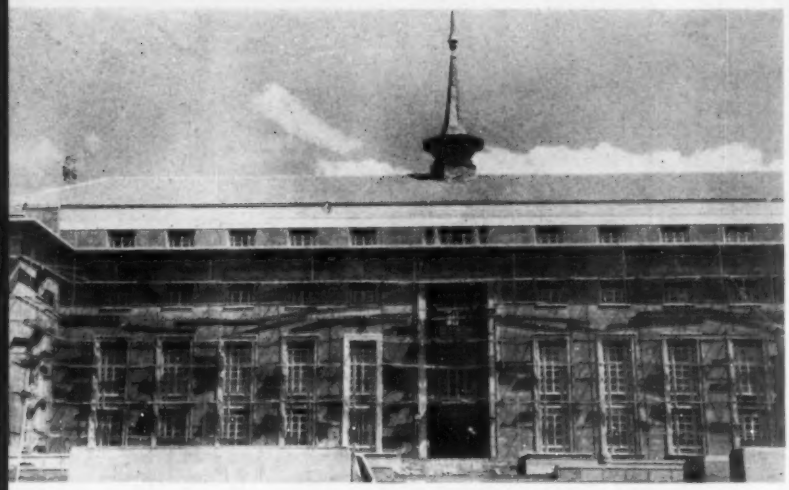


CROSS-SECTION

1

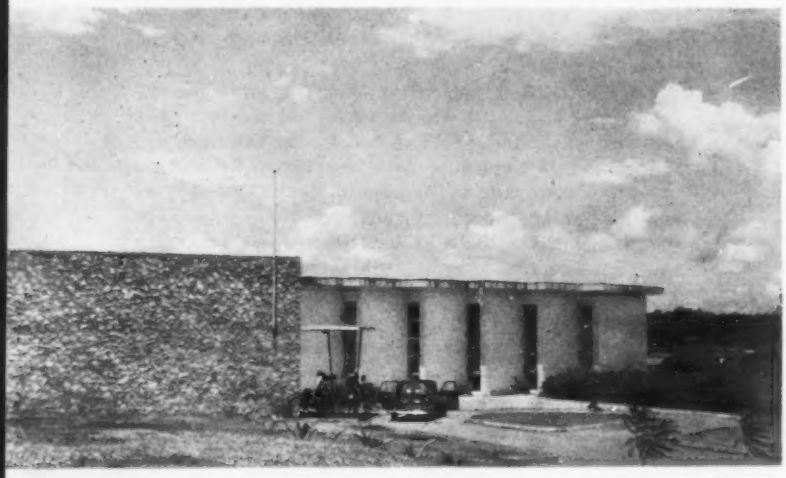
Building in Kampala

7



2

Notes and pictures by
EDWARD D. MILLS
whose firm Edward
D. Mills & Partners
were the authors of
the winning design for
the new Uganda Legislative
Council Building.



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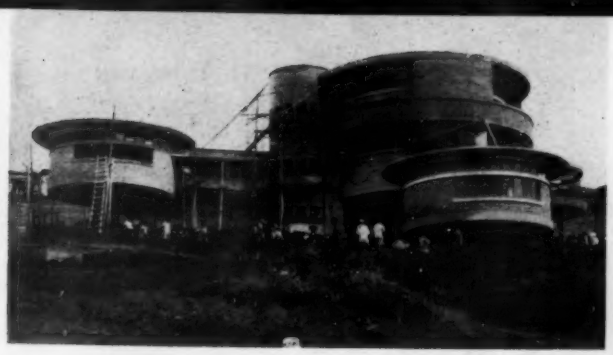


5

4

KAMPALA is a rapidly developing city and forms the administrative and commercial centre of Uganda. Although vast regions of Uganda are undeveloped the areas around Kampala are not ideal for building development in view of the considerable areas of swampland and the fact that most of the land outside the city boundary is owned by Africans and is not readily available for development. In spite of the size of the country, the actual city boundaries are, therefore, restricted and although recent expansion of the city has been possible, a shortage of suitable building land is already becoming apparent and there is no doubt that high building will be fairly common in Kampala in the next few years. This has already occurred in other parts of Africa.

The buildings illustrated show some of the recent work of European architects in Kampala and include the Uganda Electricity Corporation's new building known as Amber House (Fig **1**) which was the subject of a recent international competition won by Morrass and Graf. This building will undoubtedly be the most sophisticated modern building in Kampala when it is completed and the progress photographs show the present stage of building work. An Italian contractor is engaged on this job and is producing first-class reinforced concrete and a standard of building which is equal to any in this country.

A different type of building is the new Lukiko building (Fig. **2**) or native parliament building for the Buganda tribe designed by Messrs. Cobb, Freeman and Powell. Here again, a high standard of building work, particularly joinery, can be seen, the contractor in this case being an Indian. The building is brick with an external rendering and green glazed tile roof. It has a very fine site but architecturally is a little dull. Many of the hills surrounding Kampala are being developed for housing and particularly Kololo, which has recently been incorporated in the city boundaries. The houses erected vary from a typical simple contemporary type of building (Fig. **4**) to the expensive and somewhat exotic adaptation of Western architecture (Fig. **5**). This reinforced concrete house, which it is estimated will cost £25,000, is a close copy of a Frank Lloyd Wright building, but again the standard of building work is extremely high.

Also at Kololo is the National Folk Museum (Fig. **6**) designed by Ernest May & Partners, which is an extremely competent and attractive building using a considerable amount of local freestone and carefully chosen materials. Some of the detailing has not stood up to local conditions and this is particularly true of the eaves' overhangs and the extensive staining can be seen in the illustrations.

Other buildings of interest include the new municipal housing (Fig. **7**) designed by Ingles and McGuinness, the Baumann office building, an exceptionally well detailed structure with an interesting use of colour also by Ingles and McGuinness and office building and showrooms (Fig. **8**) by H. G. Radford and Partners.

Outside the city boundaries some of the smaller houses on leasehold land on the hills overlooking Lake Victoria are very attractive, using contemporary forms and open plans with considerable charm enhanced by the superb views across Lake Victoria. The photographs (Fig.**9 & 10**) show a typical house of this category designed by Ingles and McGuinness.

There appear to be tremendous opportunities for contemporary building in Uganda and a great deal of building work is in progress. Materials are limited, as most of them have to be imported from Europe, the only local products being a very poor quality brick, a certain amount of local stone and good quality timber. On the credit side heating is seldom required and in Kampala the climate is pleasant most of the year with only a short wet season.

9

10

West Africa

NIGERIA

HOUSE at Ikoyi, Lagos, is for Messrs. Mandillas and Karaberis. Has three bedrooms upstairs and lounge, living room and usual offices on the ground floor. The construction is of sand concrete blocks with reinforced concrete floors and lintels. The roof covering is corrugated asbestos cement sheets. The house was completed in 1953 by Dys, Trocca and Valsesia Ltd., Contractors.

* * *

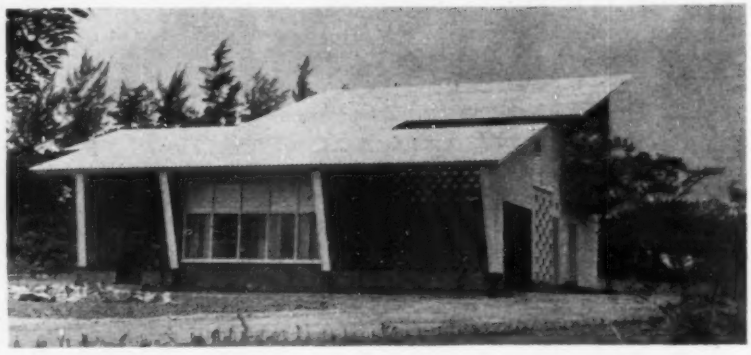
The house at Ibadan has two bedrooms and is distinguished for its long single pitch roof. The building is in the nature of an experiment to reduce building costs; little timber has been used in the structure in order to lessen attack by termites. The house is for the Church Missionary Society and was completed in 1956 by general contractors G. Cappa Ltd., of Lagos. The architect is R. S. Nickson who also designed the other buildings illustrated on this page.

* * *

The maisonettes at Ikoyi, Lagos, are for the Royal Exchange Assurance Co. They were completed in 1954. The maisonettes are two bedroom and on top of each is a pent-house flat. The building is reinforced concrete structure and external finish is colour wash. The floors are of hollow pot construction ; the pots are made of concrete and not of terra-cotta. General Contractors were Borini Prono Ltd.

Maisonettes, Lagos

House at Lagos



House at Ibadan

Another view of the Maisonettes at Lagos

The University College, Ibadan, has been built on a five square mile site on the outskirts of the town. It is a concentrated layout of buildings that run east-west to take maximum benefit from the prevailing south-west breezes. Residences face on to quadrangles and are sited compactly to reduce walking distances between the buildings.

Trenchard Hall, at the University, is one of the buildings grouped around the central administrative block and can accommodate nearly 1,000 people. The high level windows shown in the picture light the balcony, and the ceiling inside the hall is continued out to the eaves in a smooth curve. The external wall to the foyer is of V-section precast concrete units slotted to give ventilation to the inside.

* * *

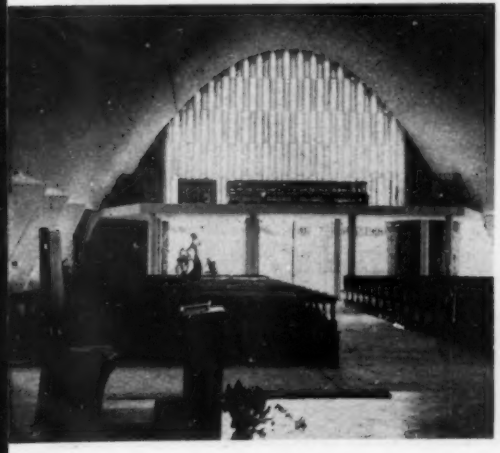
The picture of one of the College Students' residences shows the balcony side of the study bedroom wing. The pierced balcony rails are pre-cast. On the right is the terrace of the dining hall. The curved shell roof of the dining hall was cast on mahogany boarding which has been left in situ as a permanent finish.

Architects for the University Buildings are Fry, Drew and Partners. Consulting Engineers: Ove Arup and Partners. Contractors: G. Cappa, Ltd.

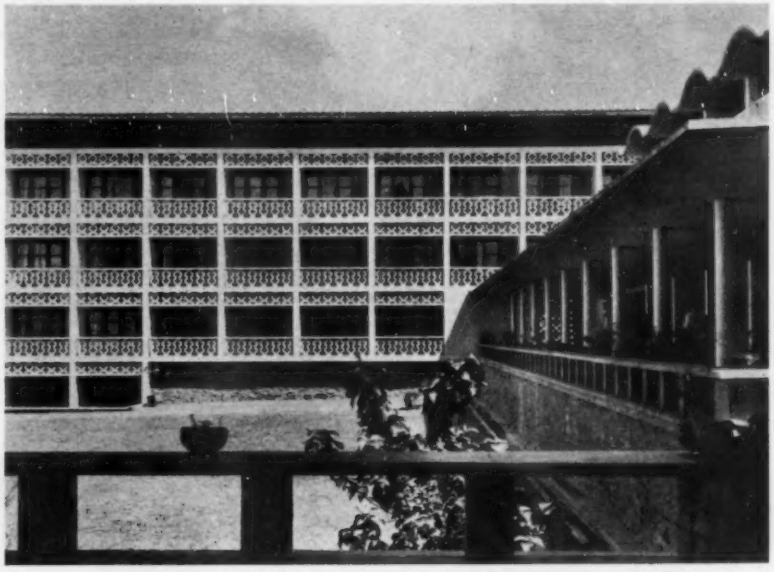
* * *

The University College Chapel at Ibadan was designed by G. R. Pace of Norwich.

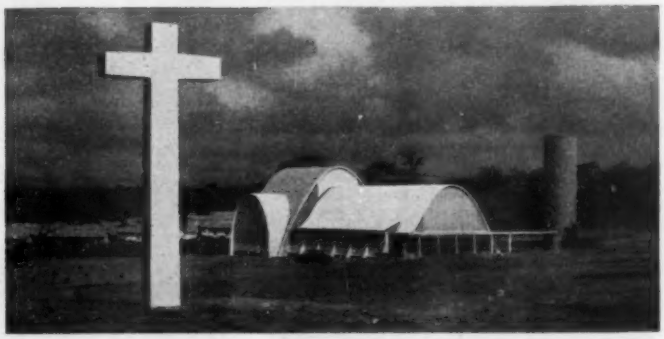
Interior of Chapel



Trenchard Hall at the University College, Ibadan, and below one of the students' residences



Chapel of the University College



West Africa | NIGERIA

Cement is the most important building material in Nigeria and the main focus of development of construction is on concrete technique, block making and finishes. All the cement used at present is imported, but the factory under construction at Enugu will provide a proportion of the country's needs in the future.

* * *

The House of Representatives at Lagos, the Capital of the Nigerian Federation, was designed by the Nigerian Public Works Department. Another Government building the Supreme Court which is also at Lagos was designed by J. F. Watkins and Partners. It was built by Taylor Woodrow Ltd.

* * *

The Ijora B Power Station at Lagos has been built on a sandy site a few feet above the level of the tidal lagoon. The whole structure is carried on a massive concrete raft—because of the poor load bearing characteristics of the sub-ground—and this raft is thought to be the largest of its type to be built. The superstructure is steel stanchions and beams, infilled with brickwork.

Consulting Engineers were Coode and Partners and the main contractors were Costain (West Africa) Ltd. These same contractors built the

Top: House of Representatives.
Centre: Lagos Station.
Below: Ijora B Power Station.
Below left: Bank, Lagos.

Railway Terminus at Lagos which was designed by the railway authorities.

* * *

The bank at Lagos are new premises constructed by Taylor Woodrow (West Africa) Ltd. for the Bank of British West Africa at Mariña, Lagos, which were opened in March 1955. Architects were Ronald Ward and Partner. Consulting Engineer: E. J. Cook. Quantity Surveyor: A. E. Thornton-Firkin and Partners.

* * *

Broadcast House at Lagos for the Nigerian Broadcasting System is another building to be erected to Public Works Department design. The contractor was Costain (West Africa) Ltd.

* * *

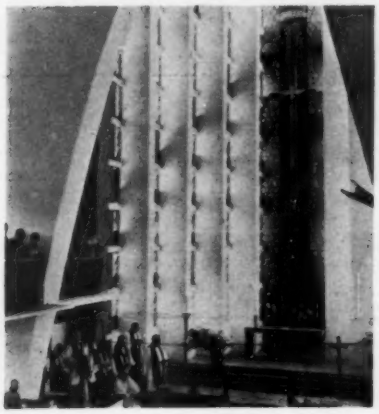
On this page is a picture of one of the staff flats which form part of the University College, and have been built on rising ground to north-east of the scheme.

As before, the architects were Fry, Drew and Partners. Cappa & D'Alberto Ltd. were the contractors and later G. Cappa Ltd.

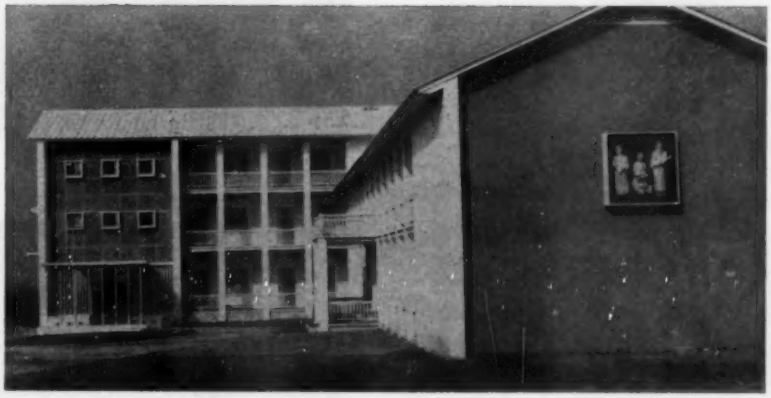
* * *

All Saints Anglican Cathedral at Onitsha is a building designed by Richard S. Nicksen and built by H. E. B. Greene Ltd. The cathedral is only partially finished and work is soon to commence on the addition of a sanctuary and a central tower.

Interior picture and perspective of Cathedral at Onitsha.

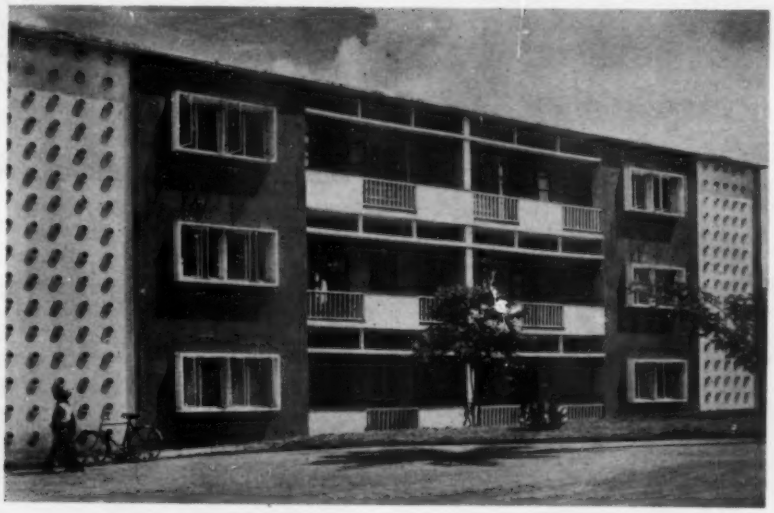


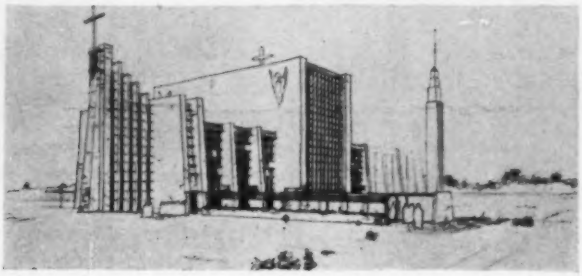
Supreme Court at Lagos



N.B.S. Studios Lagos.

Staff flats, Ibadan University.





West Africa

GOLD COAST

WESLEY Girls' School has dormitory accommodation (on right of cut) for 300 girls, and the site is dominated by a chapel built on the highest point of the ridge. Its cylindrical belfry was redesigned as a water tower.

Architects: Fry, Drew and Partners. Contractors: George Watson and Co. Ltd.

* * *

Four miles west of Takoradi is the Apowa Roman Catholic teacher training college for 90 men initially. Most of the accommodation is single storey and the buildings are R.C. frame with sandcrete block infilling.

The buildings were designed by Fry, Drew, Drake and Lasdun and constructed by Hamilton and Hanser.

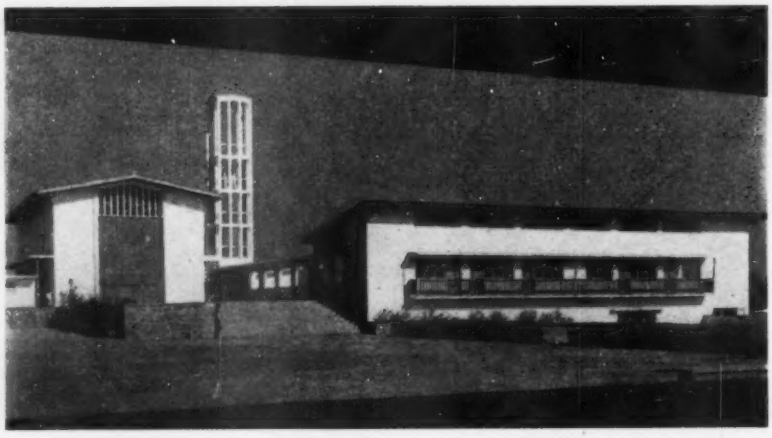
* * *

In the centre of Accra is the four floor Leventis Store which was added to one end of the existing shop and connected to it by bridges —one at each end. Ground and first floors are used as departmental stores and the second and third floors are office and storage space. The roof has a canteen and terrace. The store was built on an awkwardly shaped site—a 70 degree parallelogram—and the whole area had to be covered. High and low level louvres on the exterior walls provide adequate permanent ventilation.

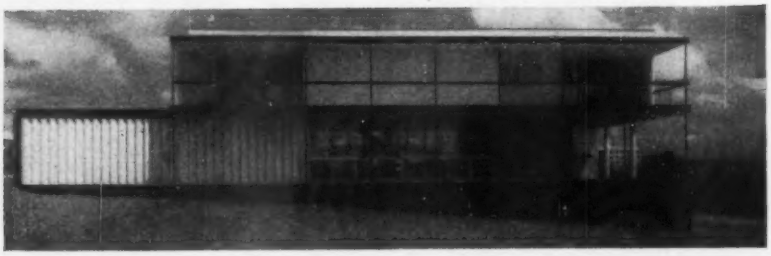
Architects: Fry, Drew, Drake and Lasdun. Contractor: A. Lang Ltd.

◀ *Leventis Store, Accra.*

Wesley Girls' School, Cape Coast



Apowa Training College



Library Board bungalow

The hall at Achimota was built for the Achimota School Council to serve dual functions of an assembly hall for the school and as a chapel.

Along the side is a concrete framed colonnade which shelters glazed doors from the sun and allows them to be left open for additional ventilation. The plan is lozenge shaped and on the gable sides are pre-cast louvres for main ventilation to the hall. These also give light to the interior.

Architect: Richard S. Nicksen and the contractor of the building, which was completed in 1955, was H. E. B. Greene Ltd. of Liverpool.

* * *

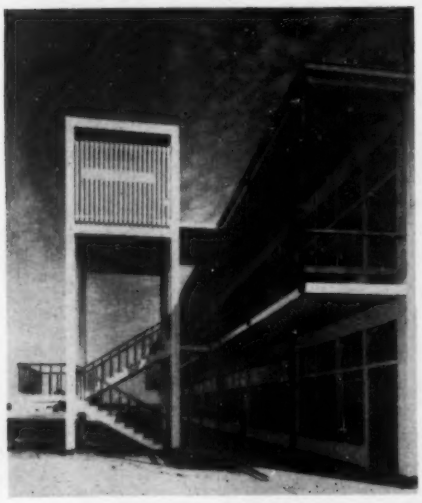
One thousand feet above the Accra plain is the Aburi Girls' School and College for the Scottish mission. It is a rocky site and the only reasonably flat piece of ground is that in front of the assembly hall (see picture). A long line of classrooms and dormitories runs east, west. The area has up to three months annual drought and the site has, therefore, an elaborate system of roof rainwater collection leading to a reservoir of 300,000 gallons capacity. Construction is R.C. frame with sandcrete block infilling, rendered and cement painted.

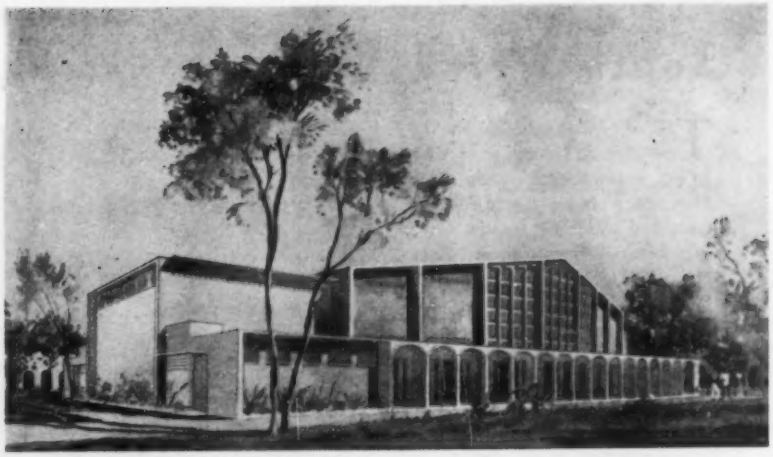
Architects: Fry, Drew and Partners. Contractor: A. Lang Ltd.

* * *

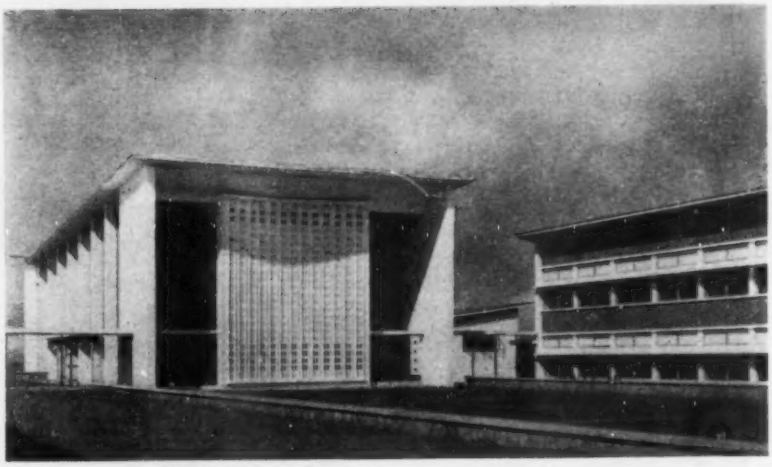
The Library Board bungalow and the Gold Coast Memorial Legion Hall, both at Accra, were designed by James Cubitt Scott and Partners. The secondary day school, Sekondi, is designed by the same architects.

Day school, Sekondi



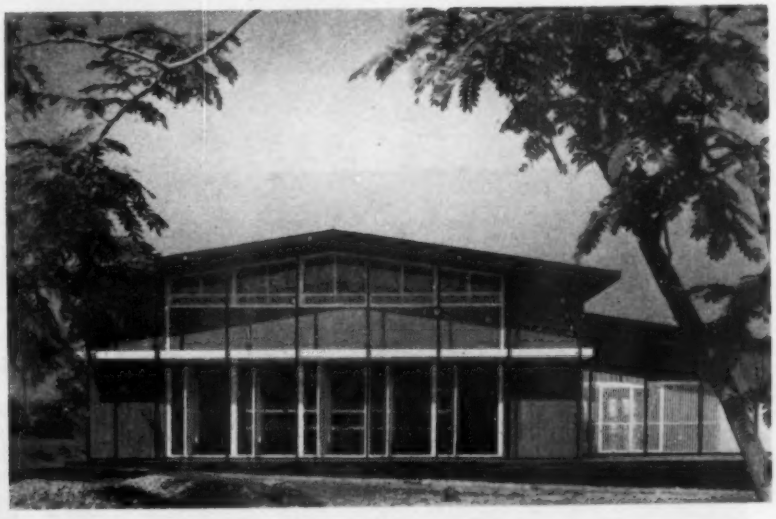


Assembly hall, Achimota



Aburi Girls' School and College

Gold Coast Memorial Legion Hall, Accra



South Africa

CAPE PROVINCE AND NATAL

THE hospital (shown on the right) is at Uitenhage, a town in the western area of the Cape Province. It has space for 500 beds and was built for the Cape Province Administration at a cost of £730,000.

Architects : Siemerink, Brinkman and van Rooyen.

* * *

In the centre of the page is the headquarters of the Natal Provincial Administration at Pietermaritzburg, the capital of the province. It is a reinforced concrete framed building and its cost, in 1949, was £123,000.

Architect was the N.P.A. Architect, N. O. Jackson.

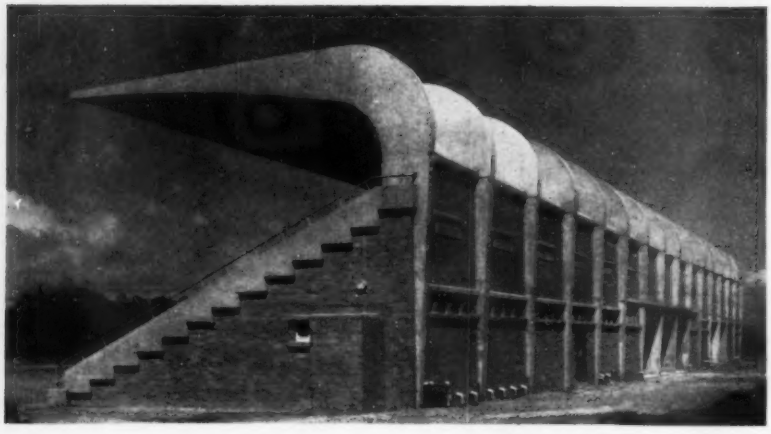
* * *

The grandstand shown below was built for the Durban Corporation at the S. J. Smith Hostel. The grandstand is 210 ft. long, 35 ft. wide and 31 ft. high, consisting of three main bays, each of which is divided into five small bays. Tapered columns support inverted beams which in turn carry the 4½ in. cantilever hood slab. The concrete seats and risers are 3 ins. thick, 2 ft. 6 ins. wide and 17 ins. deep, and are supported on raking tapering concrete beams. Accommodation is provided beneath the seats for cloakrooms, equipment stores, visiting and home teams' changing rooms, and other storage space. Engineer : H. A. Smith (City & Water Engineer, Durban).

All the buildings on this page were constructed by Rush & Tompkins (S.A.) (Pty.), Ltd.

Hospital at Uitenhage

▲ *N.P.A. Headquarters Pietermaritzburg*



Grandstand, Durban

East Africa | NAIROBI

THE Nairobi Technical College was designed by the Kenya Public Works Department for the Royal Technical College of East Africa. It was completed in October last year, at a cost of £250,000, and took 26 months to erect, in spite of delays in delivery of materials from the U.K. and the Mau Mau emergency. The building has a reinforced concrete framed structure, a total floor area of 190,000 sq. ft., and its plan form is a central administration block flanked on either side by class-rooms, laboratories and crush halls. These are predominately four and five storied.

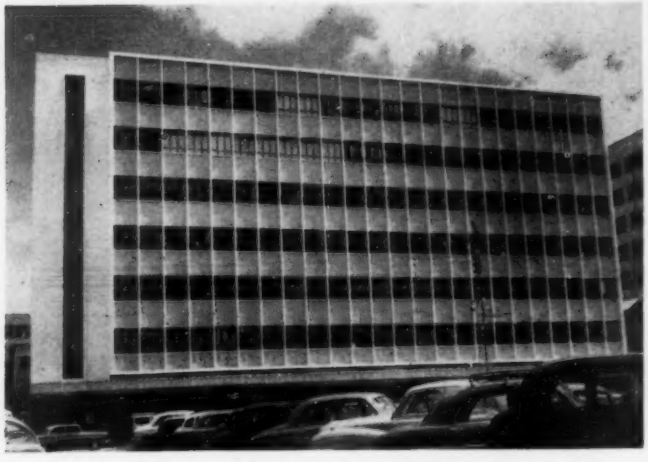
Contractors were Taylor Woodrow Ltd.

Two pictures of the Technical College

* * *

Claimed to be the biggest office building in Nairobi is Stanvac House which was opened in March last year. It is seven storeys high and houses 160 offices including those for the Standard Vacuum Oil Co. On the ground floor is a Coffee Bar operated by the Coffee Board of Kenya. The building has been faced with octagonal mosaic slabs which were imported from Hong Kong and used because it was felt their durability is superior, in upland conditions, to precast stone or terrazzo.

Contractor : Kanjee Naranjee Properties Ltd.



◀ *Stanvac House*

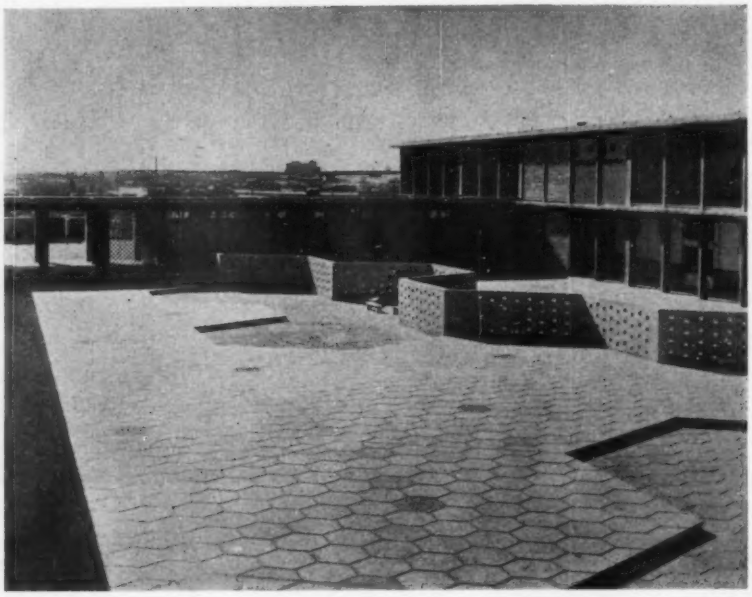
Middle East | KUWAIT

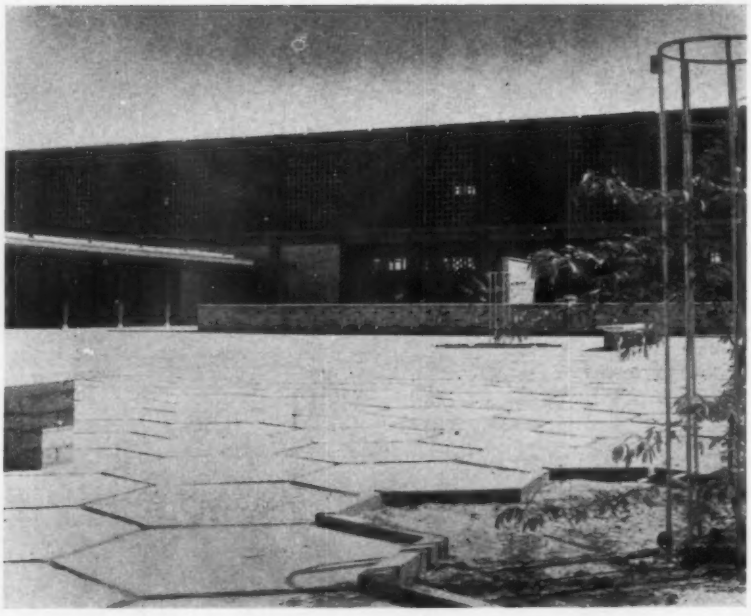
IN 1951 Kuwait was a 200 year-old town of some 150,000 people living largely in congested primitive conditions. Only five years later, thanks to oil revenues, generous compensation for demolished buildings, plenty of spare land, and a wise ruler unhampered by red tape, the redevelopment of Kuwait is approaching the half-way mark.

Outside the four mile wall, eight neighbourhoods, each of 516,000 people, based on junior schools, are being built around minor civic centres. These accommodate people displaced from the old town where space then becomes available for new roads, open spaces and buildings.

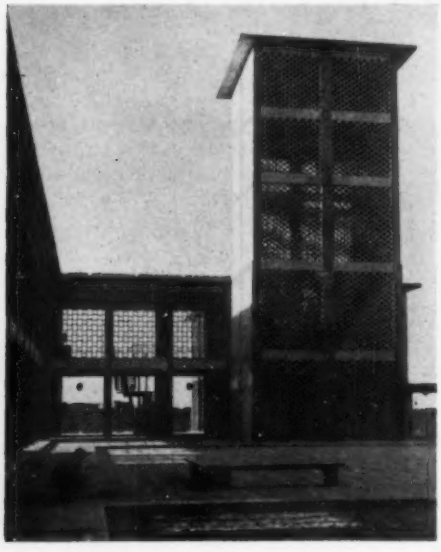
* * *

A major scheme has been the building of new schools for the Ruler of Kuwait. Pictures of the typical building types are shown on this page. In all the programme has called for erecting a technical college, three elementary schools and five nursery schools and the chief factors governing planning have been to design against excessive heat, during May to September, and to take advantage of cool prevailing winds. All important rooms face north east, the coolest aspect, and windows here are glazed whilst openings to south west provide cross ventilation. A central courtyard is prominent in all the schemes—there is no view nor main elevation in the Western sense of the word. Architects for the schools : Tripe and Wakeham.



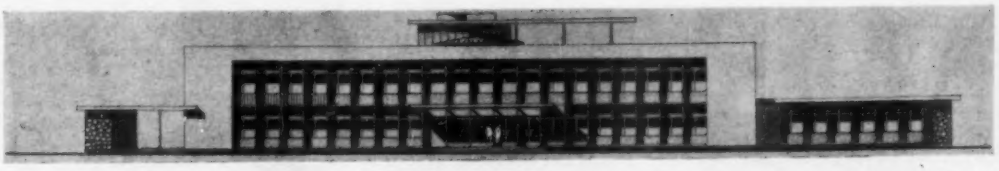


Schools in Kuwait

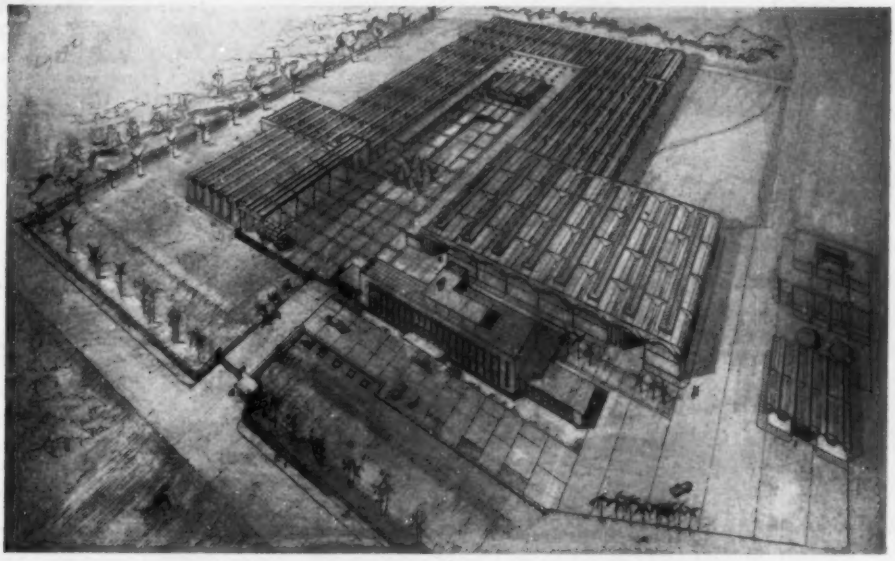


* * *

The Cotton Mill near Damascus for the United Arab Industrial Corporation who have their headquarters in Damascus 6 km. away, commenced in July 1955. The site faces on to the main Jerusalem road. The main buildings (26,000 m. sq.) are due for completion this year. The mill has both air conditioning and humidification as the climate of Syria is very varied. Temperature



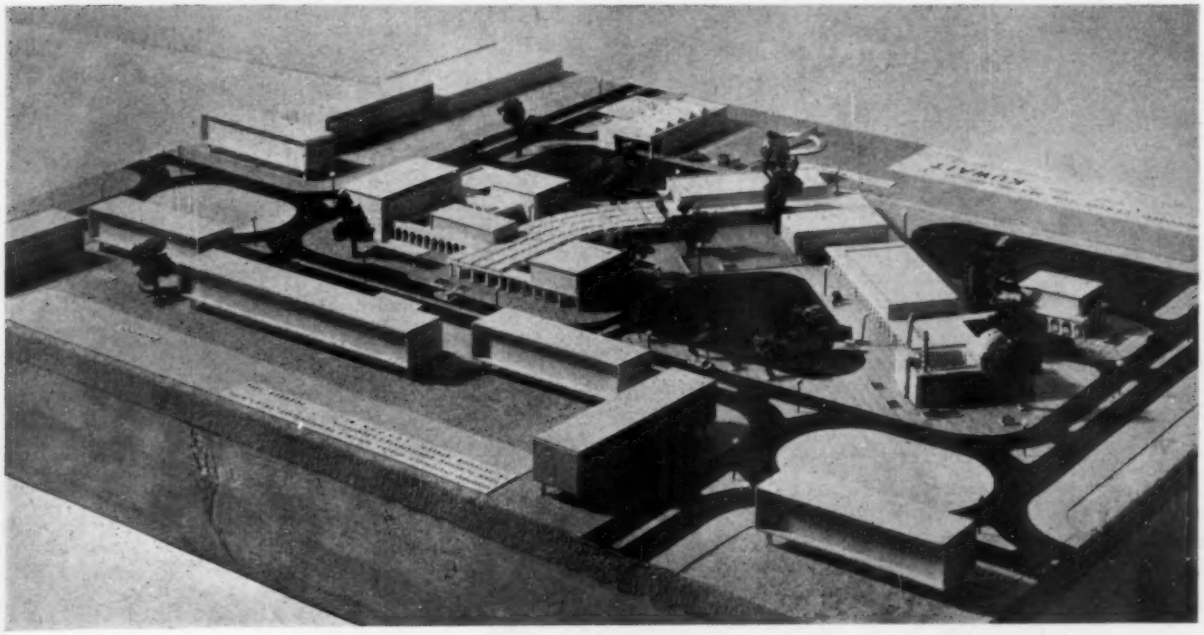
Elevation of Cotton Mill, Damascus. The Office block
Perspective of Mill



DAMASCUS AND KUWAIT

variation meant designing for a maximum summer/winter difference of 50°C. and rapid temperature changes over 24 hours. The climatic factors which include very dry weather, heavy rain and occasional winter snow influenced the concrete roof design. Architects : Abbey & Hanson, Huddersfield. Structural Engineers : B.R.C. Co. Stafford. Supervision on site by Paul Bruggermann.

Civic Centre at Kuwait, designed by Minoprio, Spencely and P. W. Macfarlane.

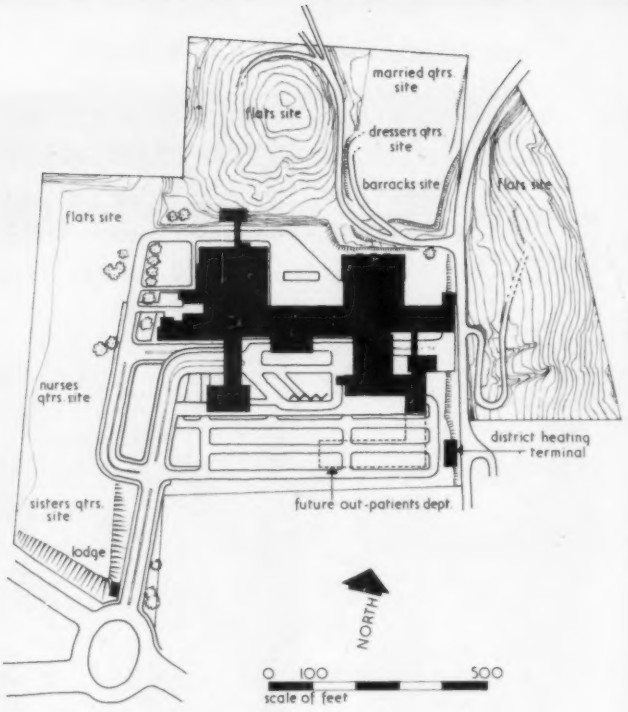


Far East | HONG KONG

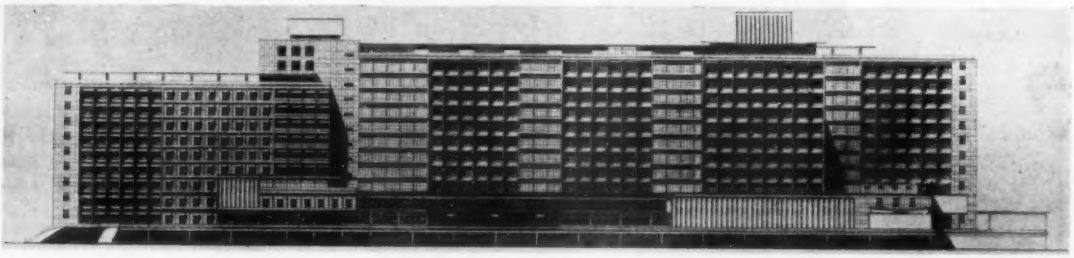
IN 1945, the population on the island was some 500,000 people, but a tremendous influx of refugees from the mainland in 1946 shot this number up to 1,500,000 and to-day there are 2,400,000 people in residence. At Kowloon, building a 1,275-bed hospital will commence this October.

* * *

To cope with the tremendous demand for ward space the hospital has been designed on an operational principle of "a rapid turnover." The building runs east-west in order to cut out hot sunshine from the wards as it will rise high on this exposed site. The structure of the building is buttressed against typhoons by the transverse blocks of operating theatres and wards on the east side. Architects: Easton & Robertson in association with the P.W.D., Hong Kong.



KOWLOON SITE PLAN



Kowloon Hospital

On the island, squatters are being re-housed in flats, some of which give a density of 2,500 people to the acre. One of these answers to re-housing is the North Point scheme at Java Road (above) which is nearly finished. The 11-storey blocks will provide 1,900 flats for 16,000 people and spread across 6½ acres. The Housing Authority has evolved a standard of minimum size rooms for the most people but which can be opened up into larger flats as the position improves. Architect: Eric Cumine.

INDIA

Calcutta's Automatic Telephone Exchange faces on to Dalhousie Square which in the early days of the City was called Lal Digi (a place of water). In the centre of the square is a pool which used to be the main source of water and around which this building and I.C.I. House, amongst others, stand. The building is 172 ft. high and the nine floors of offices rise above a ground floor which is predominately devoted to housing plant and equipment. Supervision of building construction was by the Central P.W.D.

* * *

I.C.I. House has been built on a site at Chowringhee, next to the Bengal Club and it was required that the new building should not exceed the height of the club. The whole area of the site was excavated for basements to house air conditioning and refrigeration plant. Individual temperature control in private offices is possible through the inclusion of separate air-conditioning units.

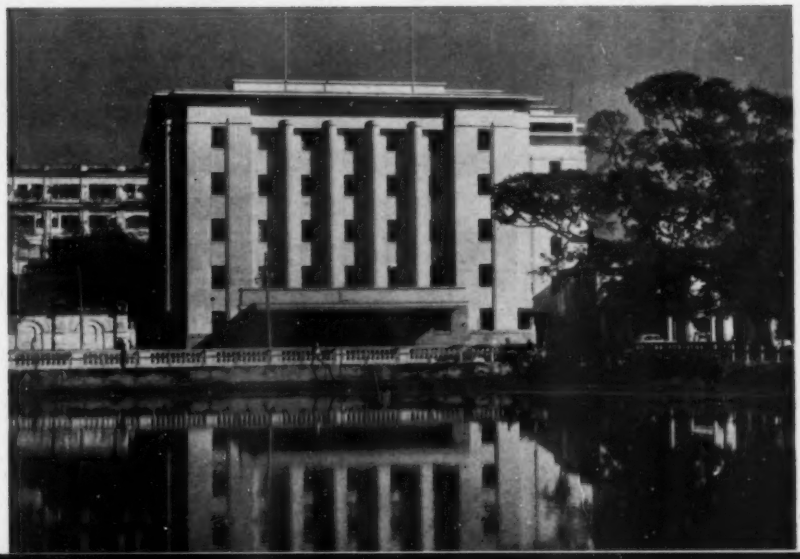
All the buildings on this page were designed by Ballardie, Thompson & Mathews, architects, of Calcutta.

Tea Board Offices, Calcutta

I.C.I. House, Calcutta

Dungapur Steel Works Office, West Bengal

Bank and City Automatic Telephone Building, Calcutta



Canada

CANADA'S expansion as an industrial power has brought about a tremendous boom in the building industry—in one recent year alone, in British Columbia, 1,363 new companies were incorporated with a total capital of £50 million. An important project has been the developing of Annacis Island, in the Fraser River near Vancouver, where the whole site has been laid out for factories and workshops. It covers some 1,200 acres and manufacturers may either rent premises or erect their own factories. On the right are two buildings which were among the first to be put up—since 1954—a factory and the administration building designed by F. Donaldson (June 1955). Main Contractor: John Laing & Son Ltd.

• • •

Perspective shows the Canadian National Railways 20 million dollar hotel, The Queen Elizabeth, being built at Montreal. Work started last December and the building is scheduled for occupation in early 1958. It will rise 21 floors (350 ft. above Mansfield Street) and is being built over and above the Central Station. Some 1,200 guest rooms have been planned as "studio-bed-sitting-rooms" because the main function of the hotel will be as a H.Q. for conventions.

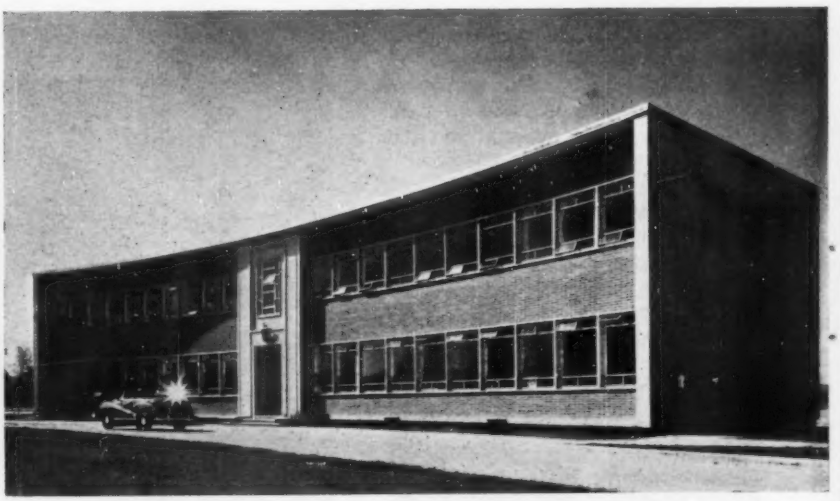
Architect: George F. Drummond in association with Holabird & Root. Main Contractor: Pigott Construction Co.

• • •

City Park, Toronto, for Hubert Buildings Ltd. Three new 14-storey blocks of flats which were handed over at the end of May 1956. The largest residential project to be privately built in Canada, the apartments provide 774 separate dwellings, 318 bachelor, 414 one-bedroomed and 42 two-bedroomed units, plus two underground garages for 568 cars. Architect: Peter Caspari. Contractor: Taylor Woodrow (Canada) Ltd. Consulting Engineers: W. V. Zinn & Associates.

Factory, Annacis

Offices, Annacis



Montreal: Queen Elizabeth Hotel

Flats, Toronto

dilapidated building and was erected in 16 weeks — pretty fast even for Canada.

Architect: Ellis Somake. Staff Architect: Dolcis Shoe Co. Ltd., in association with Peter Caspari. Contractor: Magil Ltd.

* * *

Trinity College Chapel at Toronto University was completed in the fall of 1955 and has been described as "the completion of an unfinished Gothic project." (The rest of the buildings are in this style.) It cost $582,223.

Architects: Sir Giles Scott, Son & Partner and supervision was by George & Moorhouse, Toronto. General Contractors were the Dickie Construction Co. Ltd.

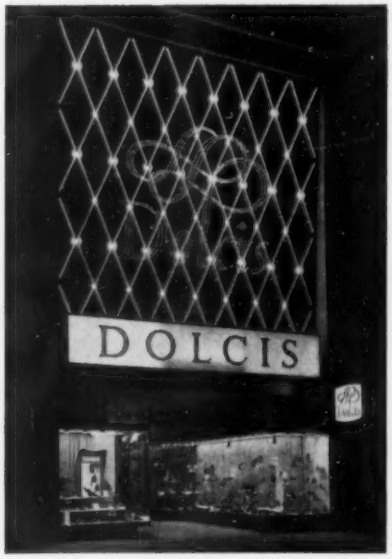
Edmonton City Hall (see A.&B.N. June 23, 1955) nears completion and as a finished building will cost £1 million. It has a structural frame of steel and is being faced with marble. Designing architects: Dewar Stevenson & Stanley. Supervising architects: R. F. Drake and W. P. Pasternak. Rush and Tompkins (Canada) Ltd. are the builders.

* * *

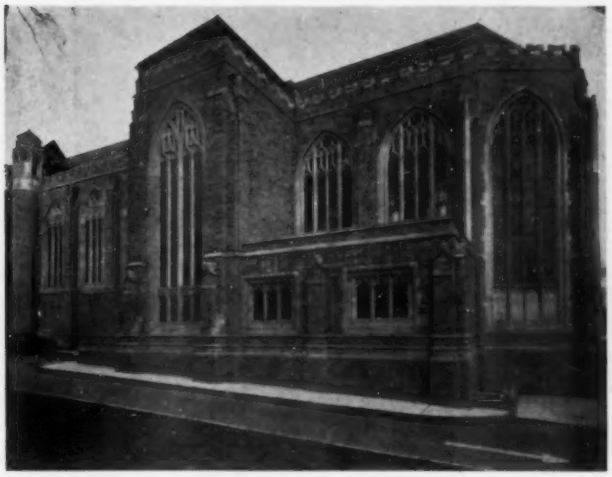
Montreal's Catherine Street West has been livened up by the illuminated façade of the Dolcis Shoe Store (finished August 1955) which has neon tubing fixed in front of vitreous enamel sheeting. The shop took the place of a

Edmonton City Hall

Shop, Montreal



Toronto University Chapel



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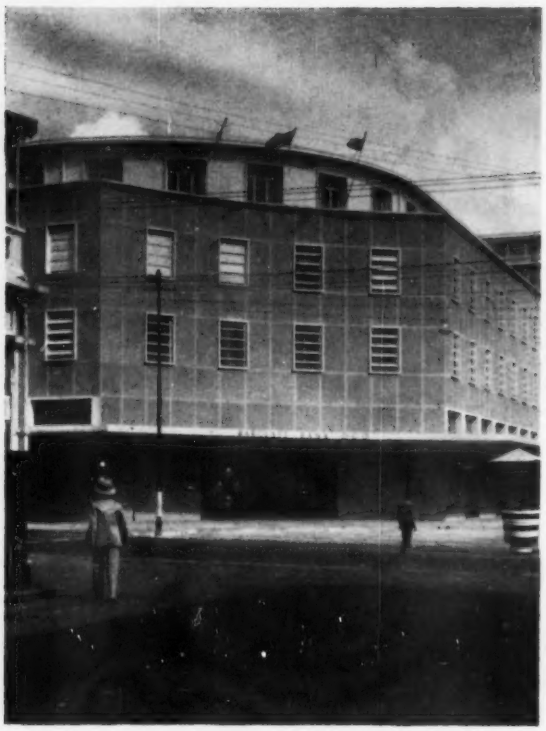
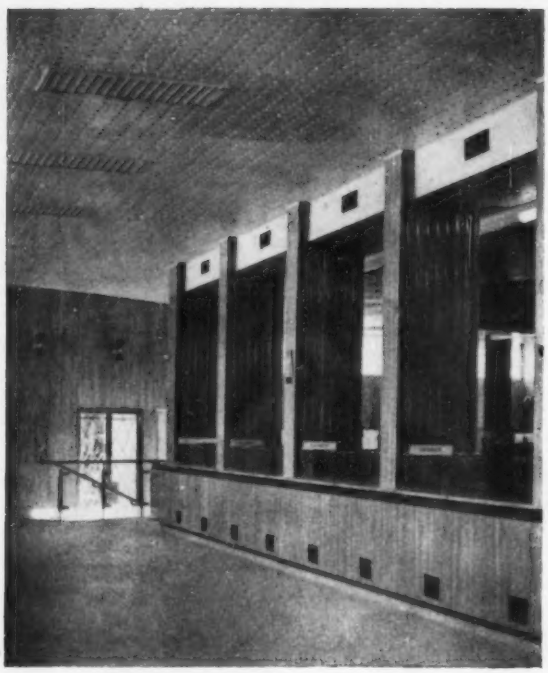
West Indies | JAMAICA



Barclays Bank exterior and interior



ON this page are two buildings in Jamaica that have been designed by Norman and Dawbarn. The bank is the headquarters for Barclays Bank in Kingston and was erected on a corner site where the building by-laws demanded a semi-circular set back on the corner to comply with town planning schemes. The building is strongly framed against earthquakes and allows for a total of four floors of offices when completed. Contractors: Higgs & Hill. Air conditioning: Benham & Sons Ltd.

The house was designed for Mr. Terry Marstella and was built at Ocho Rios on the north coast of the island.

Marstella house terrace and pool

THE ARCHITECT and Building News, 12 July 1956

Laminated Teak Domed Roof

COLLEGE OF ENGINEERING RANGOON

architects: Raglan Squire & Partners

ONE feature of the Timber Development Association's stand at the Building Trades Exhibition which attracted considerable attention was a model of the Assembly Hall for the College of Engineering, Rangoon. Much of the interest was undoubtedly created by the domed roof (designed to cover some 10,000sq ft in a single span).

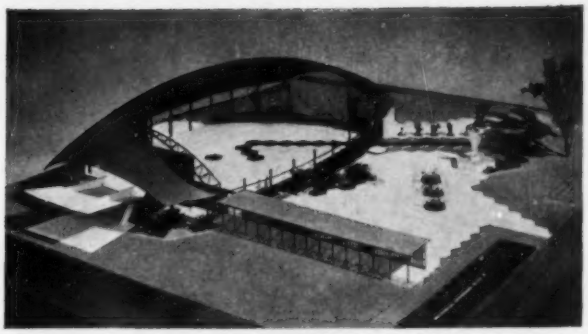
This roof, which is 153ft long by 93ft wide across the centre (narrowing to 61ft 6in at each end) and weighs more than 140 tons, has been constructed entirely of Burmese teak boarding glued together in five layers. The desired shape was obtained by using "Arcon" scaffolding over which timber ribs were fastened and shaped. To these ribs the first layer of boarding ($\frac{7}{8}$in thick, 4in wide, tongued and grooved) was temporarily screwed to give the correct curvature and to form a good base for the subsequent four layers. These were also 4in wide, but of $\frac{1}{8}$in thickness and with square edges. Laminated beams were used to strengthen the eaves at each side and further laminated beams were incorporated to provide horizontal fixings for the two steel portal arches by which the roof will be supported after the removal of the scaffolding and ribs.

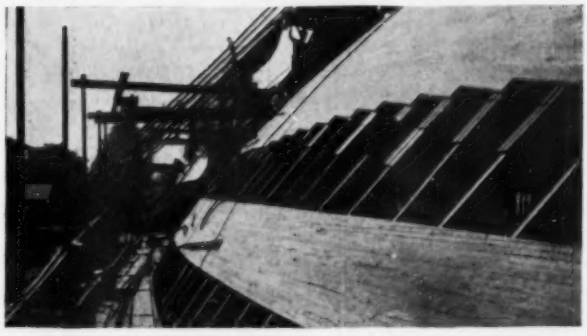
With the success of this project depending so much on the use of the correct type of glue as well as on the employment of the correct laminating techniques, the advice of Leicester, Lovell & Co. Ltd., of Southampton, who have had considerable experience in the laminating field, was sought by the architects at an early stage in the planning. To provide maximum durability, a fully weatherproof glue was essential and CASCOPHEN RS.216-M Resorcinol Resin Glue was recommended and used for the whole of the laminating work.

Method of construction

In order to work efficiently on such a large laminating project, a team system was essential. Six teams were employed on the laminating work, the individual members of these teams having a specific job such as spreading glue, laying boards, tightening screws; a seventh team was employed entirely on planing. All teams consisted of eight tradesmen (carpenters) and four assistants.

After the first layer of boards had been secured to the temporary ribs, the surface to be glued was planed to eliminate all high spots and then thoroughly cleaned by hand brushes to remove dust and dirt. This procedure of planing and cleaning was carried out for each layer. The glue was spread on both the surface of the laid boards and the underside of the next layer. Boards were placed in position with joints staggered, so that these came approximately 18in apart. Four boards were laid at a time and were wedged sideways to ensure good edge joints. Vertical pressure was applied by 1$\frac{1}{2}$in x 12G countersunk wood screws placed at approximately 8in centres, all boards having been previously drilled and countersunk.





The first layer of boards was laid from end to end along the length of the roof, the second layer at 45 degrees to the first, the third layer across the roof (i.e. 90 degrees to the first layer), the fourth layer again at 45 degrees but at 90 degrees to the second; the fifth and final layer was laid along the length as the first.

Consultant Engineers; Ove Arup and Partners. General Contractors: Taylor Woodrow Construction Ltd. Scaffolding: Quadrac Ltd. Tubular Steel Trusses: Raylor Bros.

OVERSEAS BUYER'S GUIDE

THIS section starts with an alphabetical list of suppliers (and their addresses), who are prepared to send goods or literature from the U.K.

The number against each name refers to the paragraphs on page 84 in which suppliers have been classified under the type of goods they are known to supply. This classification is limited to those items which have been covered in a series of special articles which are appearing each month in the A&B.N. To date these have included the following subjects: Door Handles, Letter Plates, Knockers, etc., Locks, Window Furniture, Taps, Doors I, Doors II, Above Ground Drainage, Sanitary Appliances I, Sanitary Appliances II, Electrical Installations, Solid Fuel Fires and Stoves, Electrical Space Heating Appliances I, Electrical Space Heating Appliances II, Contractors' Plant I, Contractors' Plant II, Domestic Gas Appliances, Oil-Fired Heating

Bronze gates in screen supplied for Trinity Chapel, Toronto University, Canada, made by James Gibbons Ltd., to the designs and instructions of the architects, Sir Giles Scott, Son and Partners.

LIST OF SUPPLIERS:

A

1 A. B. SALES LTD., 4 Stratford Place, London, W.1. Mayfair 5040
2 A. E. W. LTD., Imperial Works, High Street, Edgware, Middx. Edgware 3975.
3 ROBERT ADAMS (VICTOR) LTD., 139a, Staines Road, Hounslow, Middx. Hounslow 5714.
4 ADAMSEZ LTD., 75 Victoria Street, London, S.W.1. Abbey 5846/8
5 AERIALITE LTD., Castle Works, Stalybridge, Cheshire. Stalybridge 2223
6 AIR SERVICE TRADING CO. LTD., Hamble, Southampton, Hamble 218
7 JOHN ALLEN & SONS (OXFORD) LTD., Cowley, Oxford. Oxford 77155.
8 G. & S. ALLGOOD, 12 Eagle Street, London, W.C.1. Chancery 4771
9 THE ALLIED IRONFOUNDERS LTD., 28 Brook Street, London, W.1. Grosvenor 8941.
10 ALUMASC LTD., Burton Latimer, Northamptonshire. Burton Latimer 343.
11 ARENS CONTROLS LTD., Tunstall Road, East Croydon, Surrey. Addiscombe 3051/4.
12 ASCOT GAS WATER HEATERS LTD., North Circular Road, Neasden, N.W.10. Willesden 1234
13 ASH & LACY LTD., Mereden Street, Birmingham 5. Midland 6371
14 ASSOCIATED BUILDERS' MERCHANTS LTD., Peter's Hill, Upper Thames Street, E.C.4. Waterloo 6321
15 ASSOCIATED BRITISH COMBUSTIONS LTD., Portchester, Fareham, Hampshire. Cosham 76468/9.
16 ASSOCIATED CLAY INDUSTRIES LTD., Horwich, Bolton, Lancs. Horwich 271
17 AUSTINS OF EAST HAM LTD., Barking Road, London, E.6. Grangewood 3444/9
18 AUTO-COMBUSTIONS (LONDON) LTD., 360/362 Wandsworth Road, London, S.W.8. Macaulay 3716
19 AUTO-DIESELS LTD., Cowley Mill Road, Uxbridge, Uxbridge 5681
20 AVELING-BARFORD LTD., Invicta Works, Grantham, Lincs. Grantham 1091

B

21 BARBER WILSONS & CO. LTD., Crawley Road, Westbury Avenue, London, N.22. Bowes Park 3461
22 BARRALETS ENGINEERING CO. LTD., Lee Church Street, London, S.E.13. Lee Green 3391
23 BAXENDALE & CO. LTD., Miller Street, Manchester 4. Blackfriars 8282
24 BARKING BRASSWARE CO. LTD., River Road, Barking, Essex. Rippleway 3057
25 GEORGE BECKER LTD., 130 Uxbridge Road, Hanwell, London, W.7. Ealing 4741
26 A. BELL & CO. LTD., 63 Gold Street, Northampton. Northampton 771
27 BELLING & CO. LTD., Bridge Works, Southbury Road, Enfield, Middx. Howard 1212
28 BENFORD LTD., The Cape, Warwick. Warwick 1170.
29 BENHAM & SONS LTD., 66 Wigmore Street, London, W.1. Welbeck 9253
30 BENNETT'S IRONFOUNDRY CO. LTD., Green Lane, Off Didsbury Road, Stockport, Cheshire. Stockport 2683
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OVERSEAS BUYER'S GUIDE

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The number against each name refers to the paragraphs on page 84 in which suppliers have been classified under the type of goods they are known to supply. This classification is limited to those items which have been covered in a series of special articles which are appearing each month in the A&B.N. To date these have included the following subjects: Door Handles, Letter Plates, Knockers, etc., Locks, Window Furniture, Taps, Doors I, Doors II, Above Ground Drainage, Sanitary Appliances I, Sanitary Appliances II, Electrical Installations, Solid Fuel Fires and Stoves, Electrical Space Heating Appliances I, Electrical Space Heating Appliances II, Contractors' Plant I, Contractors' Plant II, Domestic Gas Appliances, Oil-Fired Heating

Bronze gates in screen supplied for Trinity Chapel, Toronto University, Canada, made by James Gibbons Ltd., to the designs and instructions of the architects, Sir Giles Scott, Son and Partners.

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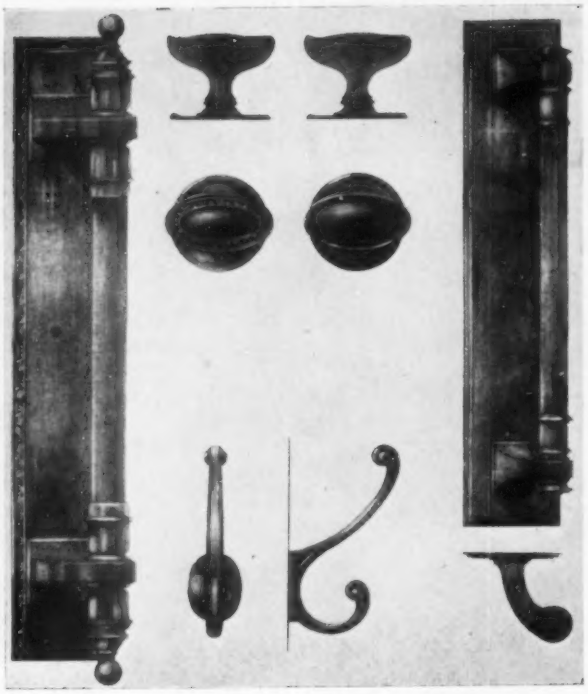

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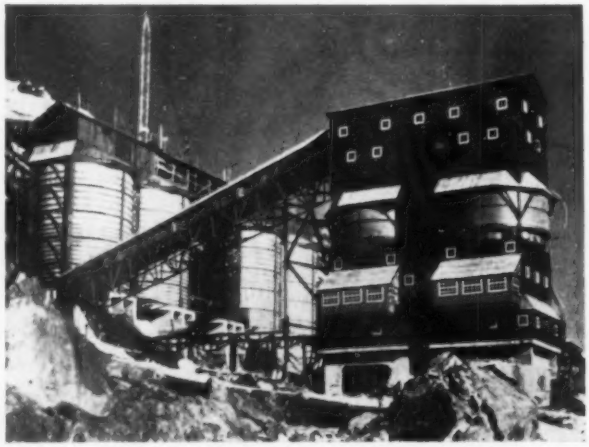

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Y

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LETTER PLATES, KNOCKERS, ETC.
3, 8, 23, 31, 66, 81, 132, 136, 142, 173, 176, 199, 201, 205, 221, 238, 247, 267, 274, 297, 300, 307, 322, 342.

LOCKS
31, 71, 121, 142, 167, 175, 186, 204, 221, 253, 267, 274, 308, 322, 340.

WINDOW FURNITURE
3, 8, 11, 23, 31, 66, 71, 81, 87, 132, 136, 176, 186, 201, 221, 245, 247, 267, 274, 297, 300, 307, 322, 335.

TAPS
9, 21, 23, 24, 35, 44, 56, 63, 76, 124, 125, 132, 136, 137, 157, 173, 213, 247, 254, 279, 283, 288, 297, 300, 307.

DOORS (framed and flush)
17, 43, 58, 61, 89, 111, 118, 147, 170, 174, 203, 207, 217, 223, 234, 278, 280, 295, 318.

DOORS (Metal)
42, 46, 87, 90, 113, 122, 142, 162, 165, 176, 216, 222, 237, 259, 335.

MOVABLE DOOR GEAR
55, 73, 90, 113, 122, 168, 172, 245, 248.

DOORS (Industrial)
42, 46, 61, 78, 87, 90, 98, 109, 113, 118, 122, 143, 158, 159, 162, 165, 176, 196, 216, 222, 237, 258, 259, 318, 335.

OIL-FIRED HEATING
15, 18, 50, 53, 57, 75, 92, 138, 177, 200, 224, 262, 311, 316, 317, 332.

ABOVE-GROUND DRAINAGE
9, 10, 13, 23, 36, 37, 56, 59, 62, 103, 130, 132, 153, 154, 160, 171, 176, 202, 209, 215, 241, 247, 276, 283, 285, 297, 299, 306, 307, 312, 320, 334, 338, 342.

SANITARY APPLIANCES (Baths, Basins, Fountains, Showers, etc.)
4, 9, 16, 23, 31, 56, 65, 76, 105, 112, 129, 132, 133, 136, 152, 180, 181, 183, 185, 189, 190, 191, 192, 206, 225, 248, 283, 288, 293, 296, 297, 313, 328, 332, 337.

SANITARY APPLIANCES (Urinals, W.C.s, Squatters, Bidets, Chemical Closets)
4, 6, 16, 23, 56, 99, 105, 119, 132, 136, 152, 181, 183, 190, 191, 206, 225, 248, 264, 283, 288, 293, 296, 297, 307, 313, 328, 334, 342.

ELECTRICAL INSTALLATIONS (Time-sequence switching equipment)
91, 178, 211, 282, 319.

ELECTRICAL INSTALLATIONS (P.V.C. insulated cables)
5, 82, 83, 88, 110, 114, 140, 148, 156, 193, 198, 226, 228, 257, 270, 272, 289, 298, 326.

ELECTRICAL INSTALLATIONS (Non-metallic conduit)
80, 115, 140, 144.

ELECTRICAL INSTALLATIONS (Consumers' control units)
33, 51, 97, 140, 169, 219, 229, 271, 281, 286, 289, 324.

ELECTRICAL INSTALLATIONS (Rising mains systems)
51, 94, 140, 169, 219, 250.

ELECTRICAL INSTALLATIONS (13 amp. sockets and plugs)
25, 34, 72, 85, 86, 91, 114, 127, 140, 161, 195, 229, 232, 242, 244, 281, 291, 324, 325, 326.

ELECTRICAL INSTALLATIONS (Small circuit breakers)
2, 91, 104, 140, 240, 250, 331.

ELECTRICAL INSTALLATIONS (Trunking systems)
54, 68, 94, 140, 219, 250, 271, 321.

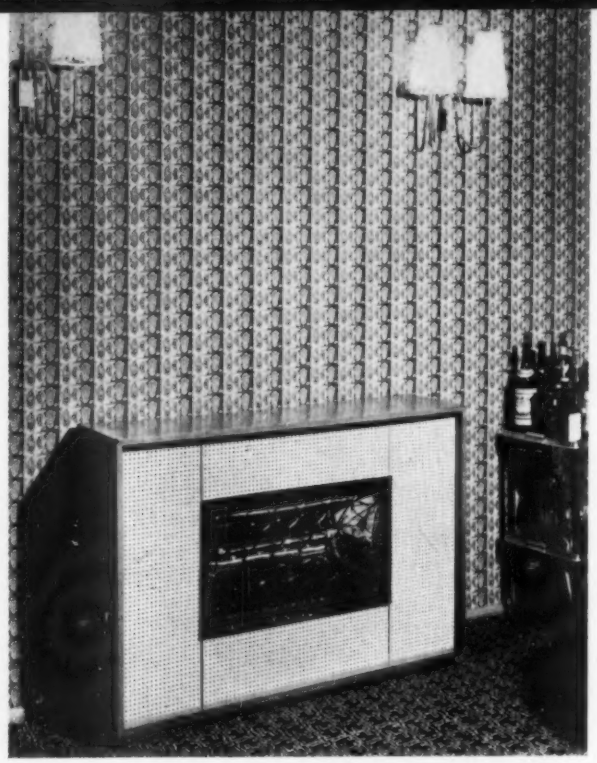
ELECTRICAL INSTALLATIONS (P.V.C. insulated conductors)
51, 120, 169, 272.

SOLID FUEL FIRES & STOVES (Open fires-intermittent-inset)
9, 26, 65, 134, 154, 163, 210, 246, 265, 287, 341, 342.

SOLID FUEL FIRES & STOVES (Open fires, intermittent-inset-convector)
9, 154, 265, 342.

SOLID FUEL FIRES & STOVES (Open fires intermittent freestanding convector) 184, 265, 342

Armourplate entrance doors by Pilkington Bros. Ltd. in Perth, Western Australia.



P.3312 electric radiant panel fire by Ferranti Ltd.

SOLID FUEL FIRES & STOVES (Open fires continuous burning inset) 1, 9, 14, 36, 41, 65, 67, 70, 108, 134, 153, 154, 163, 179, 202, 210, 246, 251, 265, 287, 304, 305, 310, 336, 341, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous burning inset convector) 9, 65, 108, 154, 265, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous burning freestanding convector) 265, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous burning with boilers—inset) 9, 65, 108, 134, 153, 154, 163, 202, 243, 246, 265, 287, 305, 310, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous burning with boiler and inset convector) 9, 65, 108, 134, 154, 231, 265, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous burning with boilers—freestanding convector) 265, 342.

SOLID FUEL FIRES & STOVES (Open fires continuous with large back boilers) 9, 65, 134, 163, 246, 265, 310, 342.

SOLID FUEL FIRES & STOVES (Heating stoves—freestanding openable) 9, 30, 65, 154, 163, 202, 231, 265, 305, 341, 342.

SOLID FUEL FIRES & STOVES (Heating stoves—Inset openable) 9, 65, 154, 163, 202, 231, 265, 342.

SOLID FUEL FIRES & STOVES (Heating stoves—freestanding closed) 9, 246, 342.

SOLID FUEL FIRES & STOVES (Heating stoves with boilers—freestanding openable) 9, 30, 65, 154, 163, 202, 231, 265, 341, 342.

SOLID FUEL FIRES & STOVES (Heating stoves with boilers—inset openable) 9, 154, 163, 231, 265, 342.

ELECTRICAL SPACE HEATING (Radiant Heaters) 27, 32, 52, 60, 65, 93, 100, 117, 127, 128, 131, 139, 140, 164, 166, 179, 182, 188, 229, 233, 235, 236, 269, 271, 314.

ELECTRICAL SPACE HEATING (Domestic convector & panel heaters), 27, 29, 32, 52, 77, 101, 106, 107, 117, 146, 164, 184, 260, 269, 301, 315, 324, 327.

CONTRACTORS PLANT (Trenchers) 7, 20, 39, 333.

CONTRACTORS PLANT (Excavators, shovels & grabs) 7, 20, 39, 40, 45, 48, 69, 102, 187, 239, 246, 261, 263, 268, 277, 292, 294, 309, 330.

CONTRACTORS PLANT (Dozers) 20, 38, 40, 48, 187, 220, 284.

CONTRACTORS PLANT (Scrapers) 38, 39, 40, 123, 187, 239, 249.

CONTRACTORS PLANT (Graders) 7, 20, 39, 40, 239, 249.

CONTRACTORS PLANT (Rollers) 7, 20, 39, 155, 220, 249, 302, 323.

CONTRACTORS PLANT (Tampers & compactors) 79, 84, 255, 273, 275, 302, 329.

CONTRACTORS PLANT (Pumps) 19, 40, 84, 145, 150, 214, 230, 255, 257, 268, 290, 329.

CONTRACTORS PLANT (Spreaders & Finishers) 39, 40, 49, 249, 252, 257, 275, 323.

CONTRACTORS PLANT (Dumpers)
20, 28, 39, 45, 69, 123, 135, 208, 273, 309, 333.

DOMESTIC GAS APPLIANCES (Water Heaters) 12, 22, 96, 126, 134, 194, 218, 227, 265.

DOMESTIC GAS APPLIANCES (Space Heating) 47, 64, 127, 134, 141, 184, 210, 218, 265, 266, 303.

DOMESTIC GAS APPLIANCES (Drying Cabinets) 22, 74, 134, 149.

DOMESTIC GAS APPLIANCES (Washboilers & washing machines) 95, 116.

DOMESTIC GAS APPLIANCES (Cookers) 64, 96, 134, 141, 218, 265.

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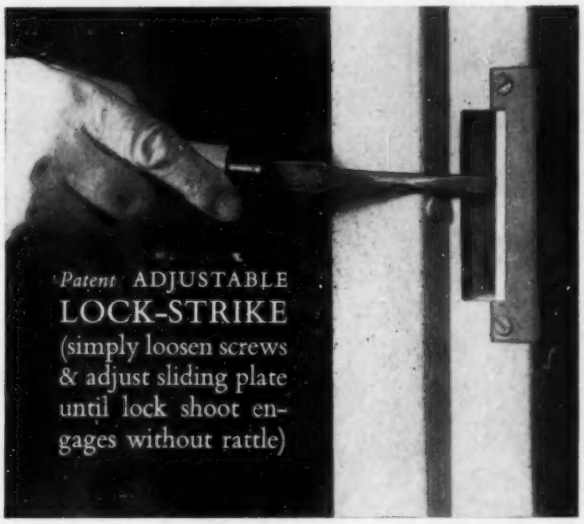

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Unsatisfactory Plumbing

THE May issue of the Plumber and Journal of Heating includes a specially prepared list of what are described as the sixteen real reasons for unsatisfactory British plumbing systems.

The greater part of the reasons put forward are sound and many would merit support in many quarters but unfortunately a serious omission in the Journal is that it makes no proposals as to how to overcome the causes, on the grounds that these are obvious. A most serious factor among them, which is only touched upon, is the ignorance of the plumbers who, in the main, are so often solely responsible for the majority of installations, since it is to be expected that they should be the knowledgeable persons in this field upon whom the architects and builders should be able to depend. In the greater number of installations about which occupiers complain, namely houses, architects are frequently not employed and when they are employed they, like the builders, who are more generally responsible for house construction, expect the plumbers to make reasonably good installations, since they believe, quite rightly (but apparently quite wrongly) that the average plumber knows his job.

It seems desirable to comment on the sixteen reasons given for poor plumbing as one cannot wholeheartedly agree with the views expressed. The first reason given for unsatisfactory plumbing is inadequacy of Byelaw administration, which in turn is modified into the absence of effective control and a suggestion that Byelaws, Codes of Practice, etc. do not contain clauses stipulating the standard of workmanship or the minimum standard of competency. Personally I view the Byelaws as reasonably good. It may not, however, have occurred to the author that standards of workmanship are virtually incapable of being written down effectively and to do so, if it were possible, would necessitate the issue of Byelaws in many volumes; further it is not the purpose of Byelaws to be restrictive and that is why there are requirements such as 'any other suitable material or fitting' which the author calls 'loopholes'. It is in fact fortunate that there are these so-called loopholes as without them no progressive step or improvement would be possible, even as a trial, until the next occasion on which the Byelaws are changed, which is only at something like 10 year intervals.

It is agreed that the administration may not always be as satisfactory as many of us would like and that in consequence some materials and fittings which are supposed to be equal to those specified are not as good as they should be but failures to achieve good plumbing appear to be due more often to the plumber not knowing rather than trying to get away with bad work. Really effective administration in the manner which seems to be suggested would require an army of inspectors for which it seems quite unlikely that either the public or the plumbers would feel disposed to pay.

The second reason given for unsatisfactory installations is the lack of uniformity of practice. It may be that the author does not appreciate that Byelaws are a part of a penal code which can only set a minimum level and must depend on interpretation by the administrators. He suggests that 'variation of opinion exists between one Authority and another as to the standards to be adopted'. I am inclined to believe that there are even greater variations of opinion between plumbers as to what should be considered a minimum acceptable standard of installation than there is among the administrators of the Byelaws.

The third reason given is that there is no enforcement of requirements by water undertakings. It should firstly be borne in mind that water undertakings have only the responsibility to ensure that there is no waste, undue consumption, misuse or contamination of water. It is doubtful that the public or the building industry would be willing to bless the degree of 'snooping' which would be required to do what the author seems to think would be desirable nor is it very probable that the public would support the setting down of very precise requirements or any above the present minimum which are those that are generally considered to be necessary. Incidentally I have in fact heard more complaints from the plumbers than from the public when water undertakings have become a little insistent on certain of the requirements. Personally, although I doubt that I would have much support, I would like to see the water authorities more insistent that fittings and materials which are at least nominally required to comply with certain British Standards do in fact comply because I believe such action would eliminate much of the necessary duplication of the products and would permit of more simplification and standardization of production with consequent cost reductions from which we should all benefit.

The fifth reason is a suggestion that municipal authorities and private architects delegate plumbing design to engineering and architectural juniors. This is probably a very wrong assumption as more frequently, perhaps quite wrongly, they delegate the plumbing to the plumbers and this is probably why there is so much bad plumbing.

The sixth reason is very similar in so much that it suggests that for all major building propects undertaken by architects, the matter of plumbing design is 'nobody's special business' and frequently materials are gathered together on building sites from sundry sources and fitted together by disinterested piecework labour'. Of course materials are gathered together from sundry sources; I have yet to find the pipe manufacturer who also sells sanitary fittings or the sanitary fitting manufacturer who is concerned with the lagging of pipe runs. Each of these are specialist supply industries, and it is surely for the plumber on the site to accept the responsibility for putting these together properly. It is regrettable to think that the plumbers enjoy 'disinterested piecework labour'.

The next group of reasons relate to cost and with these I have much sympathy because, as I have said so often in these columns, I am sure there is not a sufficient evaluation of first costs in relation to economy in maintenance.

The seventh reason given is that to save costs Borough Engineers and speculative builders have installed, and still do install, sub-standard systems. How true this is, but if the owners, be they local authorities or private householders, are willing to accept the responsibility for the maintenance costs so incurred what can one do about it.

The eighth reason would no doubt have support in many quarters. It is a suggestion that, in municipal building, initial costs are very important and authorities are often forced to sacrifice the 'finer' points in order to obtain Government grants. I question whether they sacrifice only the finer points as I believe more often they sacrifice the major points as well. As to the proposal that lump sum tenders are often accepted with inadequate mention as to how the plumbing is to be accomplished, is an obvious weakness; this position should be safeguarded by the preparation of adequate specifications or alternatively by the comparison of adequate specifications provided by the plumbers who tender.

The ninth reason is that builders are encouraged by house buyers to save on the contract and that there is a misplaced emphasis on lavish fittings and finishes to the detriment of sound plumbing. This reason is only too correct as the average purchaser of a house cannot reasonably be expected to be knowledgeable about what is required of those parts which he either cannot see or cannot understand but what does the author propose as a solution to this very real problem?

The tenth and eleventh reasons relate to the incompetence of plumbers

Unsatisfactory Plumbing

and instead of being as two of 16 reasons they probably should have been a much greater proportion of the total number. It seems probable that one can read into this a desire for national registration of plumbers, but, and I believe I am not alone, I do not believe that the registration of plumbers will ensure good plumbing as from experience I know of registered plumbers who under no circumstances would I employ again because their knowledge of plumbing is no greater than that of the 'odd-man round the corner'.

The remaining five reasons which the author classes as general are perhaps a little strange. The twelfth reason is the 'average Briton's insistent wish for the traditional and out-of-date house appearance and heating method.' I just do not believe this to be true because the average Briton is, I am sure, relying on the plumber to provide a system which works properly and incurs the minimum of maintenance and certainly no maintenance on account of frost. If the reasons for extra costs were explained most purchasers would be willing to accept them.

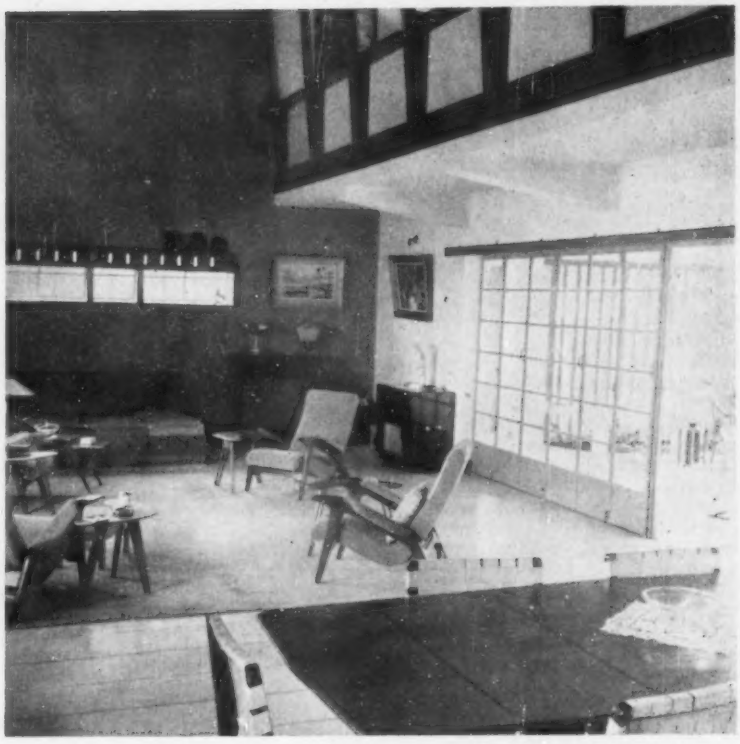
The thirteenth reason is an expression of opinion that there is a lack of interest by architects, builders and local authorities because they tend to leave plumbing to solve itself, which is quite untrue. What they do is to leave it to the plumber who they believe and expect to be competent to provide an efficient system.

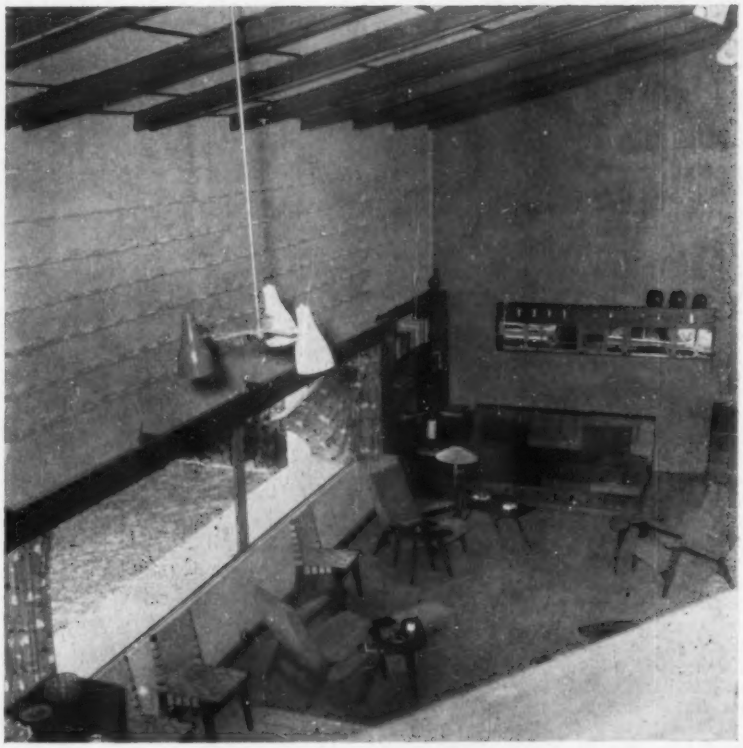
The fourteenth reason is a suggestion that architects, builders and local authorities are ignorant as to the better methods and new developments. I am quite sure they are just as knowledgeable and far less conservative than the average plumber. The fifteenth reason is precisely the same as the fourteenth.

The sixteenth reason is to a great measure a repetition of certain earlier reasons that there are insufficient and inefficient inspectors due to the reluctance of some water authorities to appoint and pay adequately qualified persons. The author should realise that much of what he complains of is outside the control of water authorities.

There are certainly very real reasons why British plumbing systems should be improved. It requires a considerable advertising campaign by the plumbers to draw attention to what is economically desirable in our new buildings. The cost of such a campaign should fall on the plumbers since it is they, in addition to the public, who are most likely to benefit. It is possible that they do not support such a campaign because in the long run better installations would make so much less work for the plumbers.

DUTCH UNCLE.





Two interior views of the living room of a semi-detached house at Ikoyi, Lagos. The living room runs through two levels with the bedrooms leading off a gallery overlooking the lounge. Furniture and fittings were designed by the architects and fabricated locally. Architect: Richard S. Nickson.

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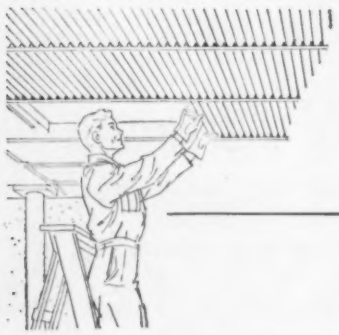

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Industrial Notes

● The Natural Rubber Development Board announces that, from July 1st this year, the rubber in roads research programme in the U.S.A. will be under the direction of J. York Welborn. Mr. Welborn comes to the Natural Rubber Bureau, the Board's American office, from the U.S.A. Bureau of Public Roads where he was Acting Head of the Bituminous Materials Laboratory. He will be in charge of the Roads Laboratory, at Rosslyn, near Washington, D.C. This laboratory has been set up solely to investigate the use of rubber in roads. It is equipped to carry out exhaustive tests on bitumen and aggregate. Cores from road sections are cut and tested on request and assistance is also given to road engineers in conducting full-scale road layings.

● Five tilers, employed by the Marley Tile Co. Ltd., left London Airport for Kuwait on June 29th. They will lay thermoplastic floors in thirty-four houses under construction for the Kuwait Oil Company at Ahmadi, and will be away for five weeks. The men have been drawn from Marley factories all over the country.

● Semtex Ltd. sent large supplies of tiles last year to Germany and South Africa where local manufacture in Dunlop factories is now increasing. Sales reached a record level, and new plant is being installed at the Brynmawr, South Wales, factory for the additional production of existing and new products.

● International Trade Information Ltd., of 16 Gloucester Place, London, W.1, announce that they are now able to give British industry and commerce a useful information service. This organisation, which is served by the world-wide reporting network of Comtelburo Ltd. (Reuters Commercial Services), and has at least one man "on the spot" in every important commercial centre of the world, has hitherto acted privately for a limited number of selected subscribers, but is now ready to accept assignments from other approved firms. The service is primarily designed to give international traders rapid and reliable answers to their questions for their private and exclusive information. In suitable cases, "I.T.I." will also report on Export opportunities for particular goods and services immediately these become known.

● An impressive new block of flats is being erected in Singapore. Known as the Ngee Ann Kongsi Building, the ten storey block will have a flat roof area of 20,000 sq. ft. covered with built-up bitumen roofing supplied by the Ruberoid Co. Ltd., London, and surfaced with insulated tiles. The contract will be executed by the company's local agents, Guthrie & Co. Ltd. The architect is Mr. Ng. Keng Siang, F.R.I.B.A., Dipl. Arch., and the general contractors are Union Construction Co.

● Pilkington Brothers Limited, well-known manufacturers of all types of constructional glass, more than doubled their dollar exports last year. The firm's sales to Canada and the U.S.A. amounted to over £5 million during 1955, exceeding the previous year's sales to these two markets by £3 million. This important sale of flat glass for the building and motor industries represented 1.6% of the total National Exports to North America. During the year Pilkingtons expanded their business in practically all world markets and their total exports were valued at approximately £11 million, which represents considerably more than half of the value of all glass and glassware exported from the United Kingdom.

● Asbestos cement building materials are now being made in East Africa. The Universal Asbestos Manufacturing Co. Ltd., who provide the management, is the only United Kingdom partner in the project. The other two partners are Ugandan. Production started at Tororo, Uganda, on May 1st, almost exactly a year after work began on foundations for the factory buildings. Initial output is above 1,000 tons of asbestos cement products a month, but it is expected eventually to satisfy the growing needs of all the East African territories.

● At a recent "At Home" at the Building Centre, Mr. A. C. Hazel, managing director of the Hurseal Heating Group, stated that every year throughout Europe over 200 million sq. ft. of heating surface is installed and 99.9% of this is in the form of radiators. The most sensational development in Europe since the war and particularly in Germany has been the switch over from the cast iron to the lightweight steel radiator, in particular the panel type radiator, because it offers a high proportion of radiation to convection. In Scandinavian Countries special heat meters are affixed to radiators so that the customer only pays for the heat emitted from the radiator and turns it on and off as we would an electric or gas fire. Western Germany is now installing 35 million sq. ft. of steel radiators which is more than three times the number of radiators of all types installed in Great Britain.

● Thermacoust Ltd. have now moved to their new address, which is Thermacoust Ltd., 20 Albert Embankment, London, S.E.11. (Telephone No.: Reliance 7281).

● Stramit Boards Ltd. announce that in view of increased demand they have decided to absorb the extra costs which have arisen over the last six months and therefore the price of 2 in thick Stramit Building Slabs will remain unchanged until December 31st, 1956. In view of the demand for 2in thick Stramit 3ft 4in wide for modular construction, the price of slabs of this width will be reduced to the same rate as 2ft. widths as from July 1st, 1956.

● Alderman W. T. Bowen, J.P., has been appointed Midland Area Director by Concrete Ltd., he will be responsible for the supervision of Area Representatives and for the liaison between customers and production departments. Alderman Bowen was Lord Mayor of Birmingham in 1952/3.

This 7½ cu yd Aveling-Barford dumper is the 350th post-war machine sent to Canada by this firm. The total value of Aveling-Barford's exports to the Dominion, during the last eight years, exceeds $2,500,000 and includes road and footpath rollers, calfdozers, and motor gra ders as well as dumpers.

NEW PRODUCTS

A new and improved type of gun for their stud welding process, Fig. 3, has been produced by Philips Electrical Limited. Although the basic process is unaltered, the actual gun has been completely re-designed and incorporates several new features. The barrel is now hollow so that the reverse end of studs can be accommodated inside the gun. This arrangement permits use of ¼in, ⅜in, ½in or ⅝in mild steel studs up to a maximum length of 8in with the standard support leg. A high degree of accuracy in placing studs is possible, since the support leg is fitted with a positioning foot, the edges of which are bevelled so that the hairline register marks can be perfectly aligned with centrelines scribed on the work-piece. Another refinement which has been added is that of three different spring tensions to alter the pressure with which the stud is forced into the weld pool. These can be varied to suit overhead, vertical or downhand operation. Suitable for operation from any standard A.C. arc welding transformer giving a minimum of 70v. open circuit.

★

An interesting method of excavation can be seen in process at the Chiswick roundabout, on the Great West Road. This mechanical unit, which is called a Planted Pile Borer, Fig. 5, gives the impression, until closely scrutinized, that it is a colossal Pile Driver, as it is of similar principle. The unit is driven by a 120 h.p. Diesel engine which drives a ten-ton crane, standing approximately 30ft high. There are several fitments, including grabbers of different holding capacities, and borers, etc. The grabber which is in current use has a lifting capacity of 2½ cu ft. This equipment has a dual action, while it is excavating the soil, etc., it is also driving a circular metal tube 15ft high × 4ft 6in wide into the ground, when the crane lifts the grabber the contents are then released on to a hoist, which is also part of the unit, and subsequently delivered to a waiting truck. The tubes can be forced one on top of the other to a depth of from 80 to 100ft down into the earth.

★

Electrolux Limited announce the marketing of a new "built-in" type refrigerator, the M170, Fig. 4. The new refrigerator which operates by either gas or electricity, is of the absorption type and is completely silent. The M.170 is of compact design and measures 2ft 7⅞in high × 1ft 9in wide × 1ft 8⅝in deep (excluding door and fittings). It has an internal volume of 1¾ cu ft and shelf area of 3.7 sq ft. Finished in white or cream enamel.

★

Hurseal Ltd. have produced a gas-fire unit for their "Hurdapta" convector open fire, Fig. 1. The change over can be rapidly made, the open fire then becomes a gas convector fire. The makers have also produced a set of decorative grilles consisting of 2 side sections and a top member. For low wide openings the side pieces may be necessary to bring the "Hurdapta" in harmony with the surround. The top section may be added when openings are both wide and high. These decorative grilles still permit the free flow of convected warm air into the room and retain the effectiveness of the appliance. They will be available during September in standard colours to match the "Hurdapta."

★

Fig. 2 shows the new extension jib fitted to a standard "Staffa 2" 2-ton capacity hydraulic portable shop crane. The jib extension can be fitted in a matter of minutes to the standard jib by means of locking pins, whilst the hook and chain is simply transferred to the extension. The maximum capacity of the "Staffa 2" with extension jib is: Load 5,000 lbs, outreach 3ft 6in and hook 9ft from ground. Manufactured by Chamberlain Industries Ltd., from folded and welded steel plate.

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Leaderflush Limited have produced a new range of Plywood flush doors. The "Sherwood," skeleton-framed with beech facings and matching hardwood strips to the two long edges, is a general purpose door for schools and public buildings, the external quality is fully weatherproof and is offered especially for general housing. The "Trent," half-solid with core area not less than 50% solid timber, has been designed with particular reference to the needs of schools and all buildings where traffic demands doors of robust construction. In designing the core of both doors, the aim has been to produce a balanced unit which will prevent bowing and twisting. The fine-sanded surfaces are suitable for painting, staining, polishing or varnishing. Special veneer finishes are also available.

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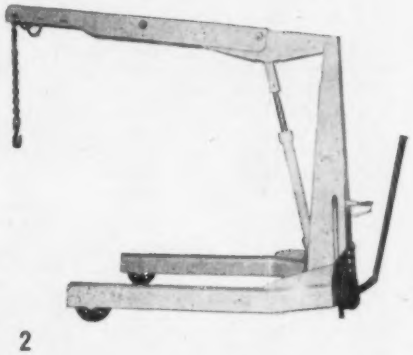

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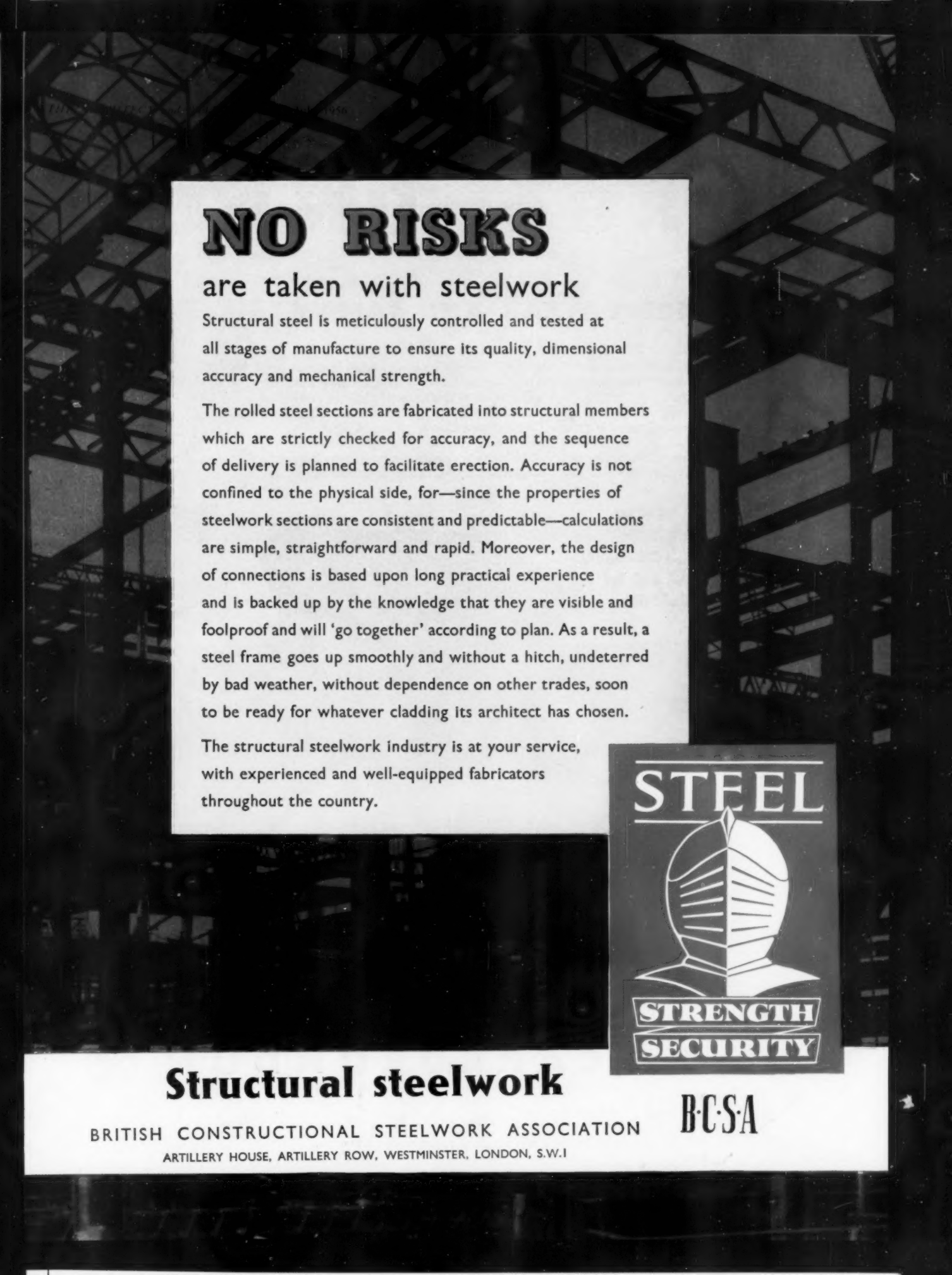

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The structural steelwork industry is at your service, with experienced and well-equipped fabricators throughout the country.

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SECURITY

Structural steelwork

BRITISH CONSTRUCTIONAL STEELWORK ASSOCIATION

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LONGEST WEARING
SAFEST, MOST ECONOMICAL
NON-SLIP GRAINS BY
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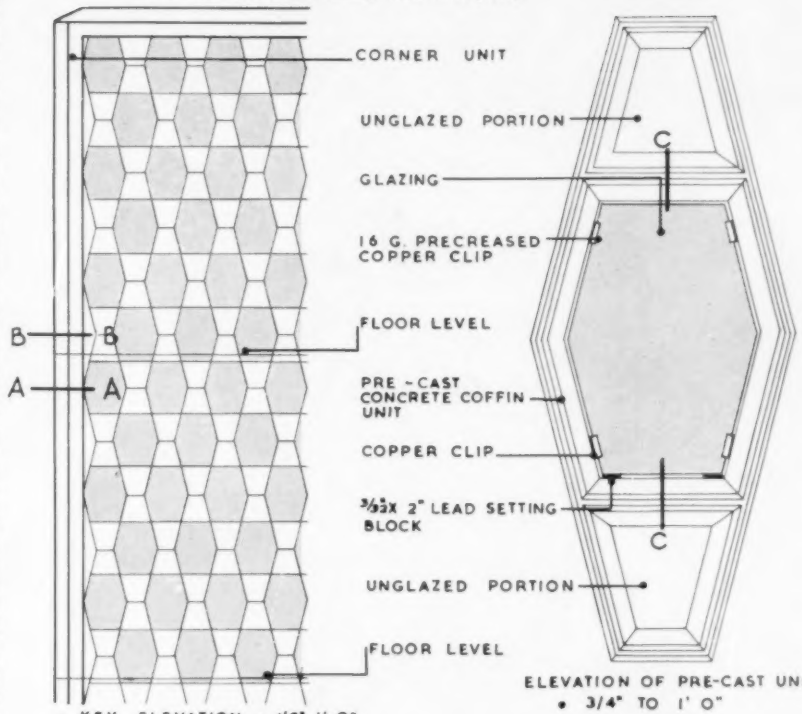
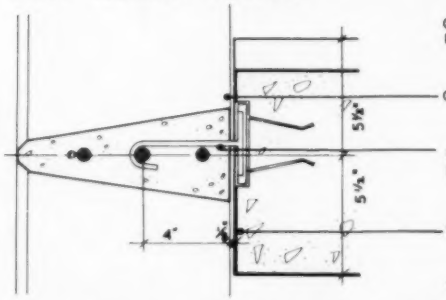
THE CARBORUNDUM COMPANY LIMITED, TRAFFORD PARK, MANCHESTER 17 PHONE: TRAFFORD PARK 2381

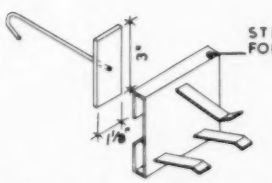


• KEY ELEVATION • 1/8"-1' 0"

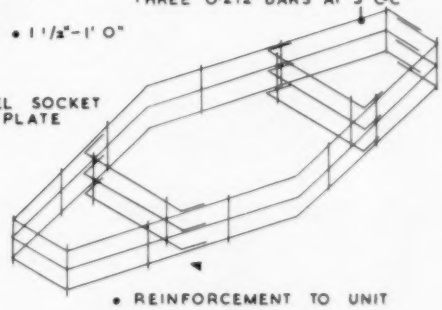
ELEVATION OF PRE-CAST UNIT
• 3/4" TO 1' 0"



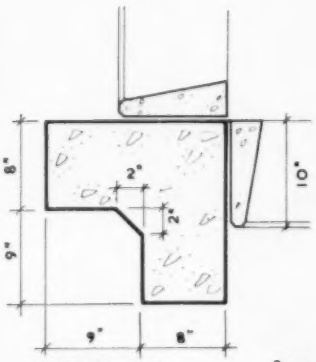
• DETAIL AT FLOOR SLAB • 1 1/2"-1' 0"



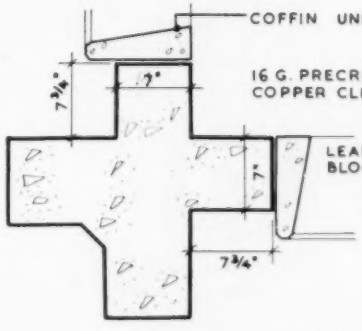
• ISOMETRIC OF FIXING DEVICE AT FLOOR SLAB



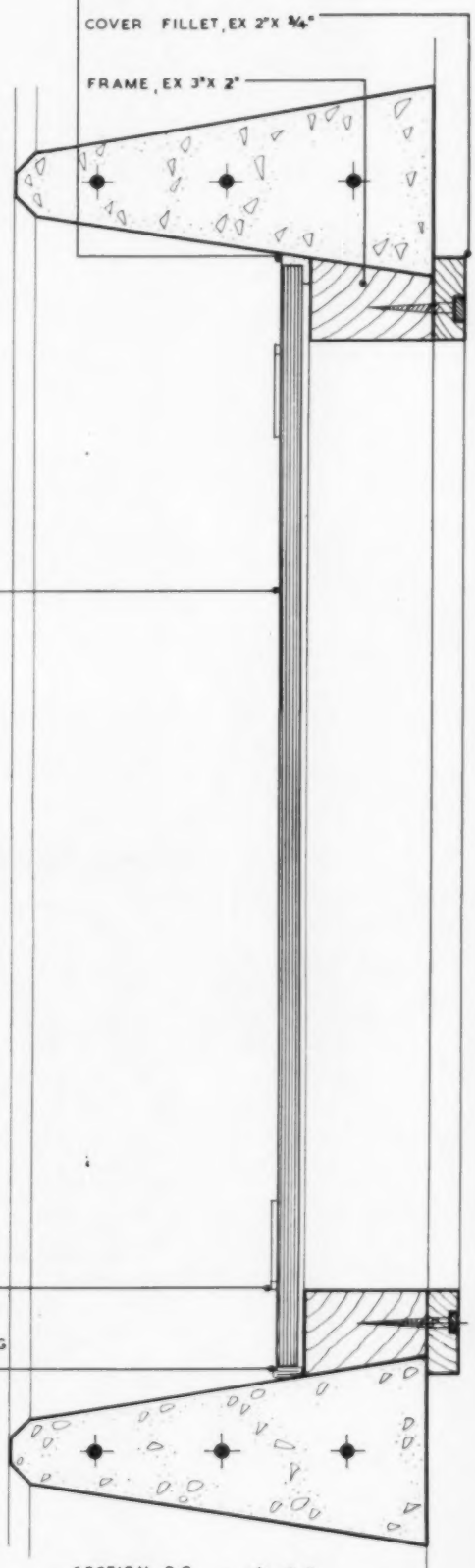
• REINFORCEMENT TO UNIT



SECTION A-A • 3/8" - 1' 0" •

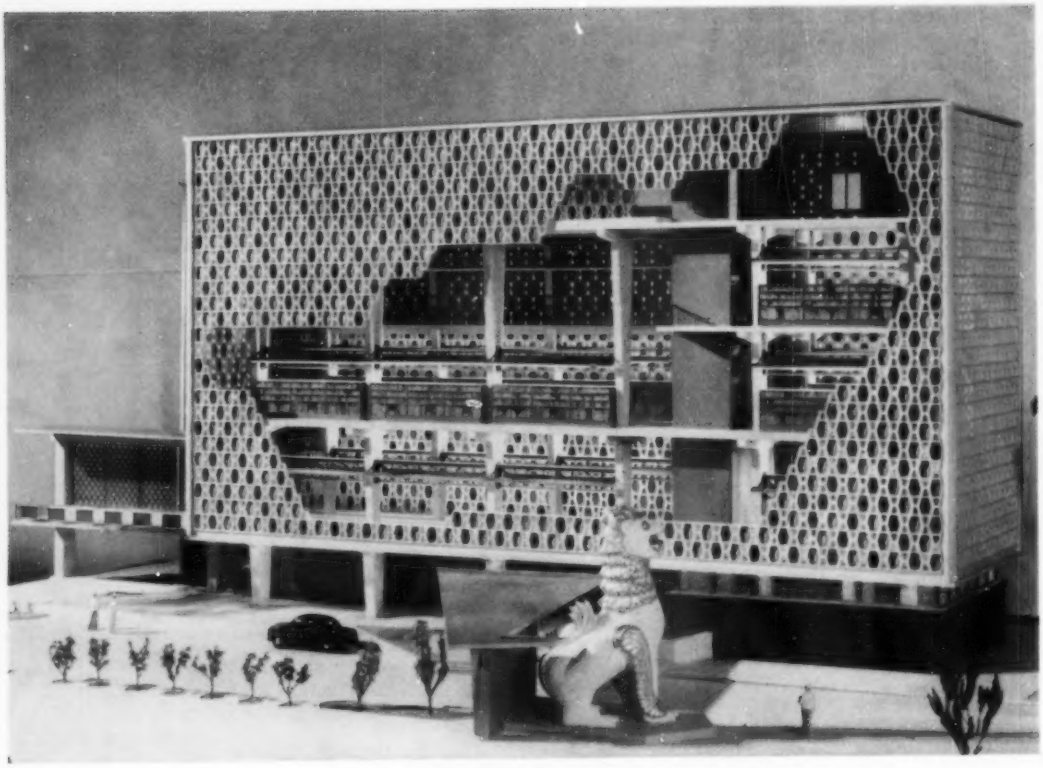


SECTION B-B



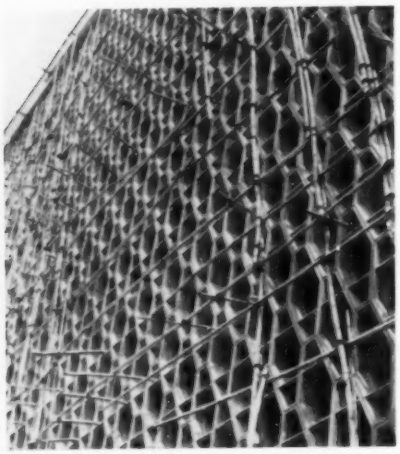
SECTION C-C • 1/4 F.S.

WALL DETAIL. UNIVERSITY. RANGOON. • RAGLAN SQUIRE & PARTNERS



WALL DETAIL, UNIVERSITY, RANGOON

ARCHITECTS: RAGLAN SQUIRE AND PARTNERS



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Contractors: Frederick Clark & Son, Liverpool

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DATE OF ISSUE 12 JULY, 1956

CONTRACT • NEWS •

*Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate: (a) type of work (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading (c) deposit (d) last date of application (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.*

OPEN

BUILDING

ASHBY DE LA ZOUCH U.C. (a) Conversion of Prior Park House into 6 self contained flats. (b) Messrs. Picl, Everard, Keay and Gimson, 6, Millstone Lane, Leicester. (c) 2gns. (d) July 16.

BANBURY B.C. (a) Erection of one block of 12 flats at Orchard Way, Banbury (Scheme No. 34). (b) Borough Engineer, Municipal Buildings, Marlborough Road. (c) 3gns. (e) July 31.

BEDFORDSHIRE EDUCATION COMMITTEE. (a) Erection of proposed secondary modern school at Aspley Guise. (b) County Architect, Shire Hall. (d) July 19.

BERKSHIRE C.C. (a) Erection of two classrooms at Radley C.E. School. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2gns. (e) July 25.

CAMBRIDGE C.C. (a) Erection of a two-storey block of 6 shops and 6 flats with outhouses and site works at the Newmarket Road - Ring Road junction. (b) City Surveyor, The Guildhall. (c) 2gns. (d) July 18. (e) August 20.

CHADDERTON U.C. (a) Erection of 120 dwellings at The Broadway site. (b) Council's Engineer, Town Hall, Chadderton, Lancashire. (c) 2gns. (e) August 3.

COSFORD R.C. (a) Erection of 2 terraces of 6 houses at Brookfield, Bildeston. (b) Edward Fincham, 9, Palmers Avenue, Grays Essex. (c) 2gns. (e) July 27.

CROYDON B.C. (a) Erection of 23 flats in a three and four storey block and 10 semi-detached houses on two sites on the Monks Hill Estate, Selsdon Park Road. (b) Borough Engineer, Council Offices. (e) August 14.

DRIFFIELD R.C. (a) Erection and completion of 2 houses at Fridaythorpe, 2 houses at North Frodingham, 2 bungalows at Langtoft, 2 bungalows at Middleton, and 2 bungalows at Wetwang. (b) Council's Surveyor, Council Offices, "West Garth," Driffield, Yorks. (c) 3gns. (d) July 19. (e) July 31.

EAST RETFORD R.C. (a) Erection of 6 houses and 2 bungalows at Elkesley, 10 houses and 4 bungalows at East Markham, together with site works. (b) Council's Clerk, Council Offices, 40, Grove Street. (c) 3gns. (e) July 20.

EAST RIDING OF YORKSHIRE C.C. (a) Carrying out alterations and additions at Filey School. (b) County Architect, County Hall, Beverley. (c) £2. (e) July 30.

ESHER U.C. (a) Contract No. 218. Erection of 10 dwellings at Northfield Farm Estate, Cobham. (b) Council's Engineer, Council Offices. (c) 1gn. (e) August 17.

EIRE — DUBLIN. (a) Carrying out proposed extensions to the Saint Louis Convent National Schools, Rathmines, for the Sisters of Saint Louis. (b) Thomas C. Whelan, Esq., National Bank Chambers, 1-2, Cavendish Row, Dublin. (c) £21. (e) July 23.

GILLINGHAM B.C. (a) Erection of 1 block of 10 flats in 2 storeys at Rock Avenue. (b) Town Clerk, Municipal

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Buildings. (c) 5gns. by cheque payable to Corporation. (d) July 20. (e) August 20.

HAVERFORDWEST R.C. (a) Erection of 2 pairs of houses, together with standing bay, sewage disposal, and other appurtenant works at Hasguard site. (b) Building Surveyor, 8, Picton Place. (e) July 20.

HEREFORDSHIRE C.C. (a) Erection of a new three-form entry secondary school on a site at Redhill. (b) County Architect, Bath Street. (c) 5gns. (d) July 16.

HERTFORD B.C. (a) Adaptation of buildings as office accommodations and improvements and repairs to Corporation properties. (b) Borough Engineer, Council Offices. (c) 3gns. (e) July 23.

HIGH WYCOMBE B.C. (a) Erection of 84 dwellings at New Road Estate. (b) Borough Engineer, Municipal Offices. (c) 1gn. (e) August 3.

IRAQ — GOVERNMENT OF IRAQ. (a) Completion of the Houses of Parliament of which the shell has been built. (b) (1) Directorate General of Legal Affairs and Contracts, Ministry of Development, Baghdad. (2) Iraqi Embassy in London, at 21, Queen's Gate, London, S.W.7. or (3) Mr. J. Brian Cooper, 38, Highfield Road, Edgbaston, Birmingham, 15, on payment of 5 Iraqi dinars in Baghdad or £5 in London. (e) September 24, accompanied by a cash deposit or a banker's guarantee from an approved bank in Iraq in a sum equivalent to not less than one-fifth of the tender figure.

LIVERPOOL REGIONAL HOSPITAL BOARD. (a) Erection of 2 staff houses at Barrowmore Hospital, Great Barrow, Chester. (b) T. Noel Mitchell, 88, Church Street. (c) 2gns. (e) July 28.

LLANDILO U.C. (a) Erection of 4 pairs of semi-bungalow type dwellings on Heol-y-Garreglas Estate. (b) Council's Clerk, Council Offices, 27, Rhosmaen Street. (d) July 16.

LONDON — ACTON B.C. (a) Carrying out alterations and additions at Rothschild Road School. (b) Borough Engineer, Town Hall, W.3. (e) July 27.

MANSFIELD B.C. (a) Contract 30/A — Erection of 8 blocks of 4 flats, together with 2 pairs of houses and 11 pairs of houses at Ladybrook Estate — Site 5G. (b) Borough Engineer, Carr Bank. (c) 2gns. (e) July 31.

N. IRELAND — BALLYMENA R.C. (a) Erection of 6 houses and construction of site works at Straid (Gracehill). (b) Messrs. Ogilby and McCutcheon, 5, Lombard Street, Belfast, or Council's Clerk, Council Offices, Cushendall Road. (c) 5gns. (e) August 4.

N. IRELAND — CO. TYRONE. (a) Erection and completion of a secondary intermediate school and a central kitchen at Castlederg, Co. Tyrone. (b) W. J. Birt, 4, Waring Street, Belfast. (c) 5gns. (e) August 22.

N. IRELAND—NEWTOWNARDS B.C. (a) Erection and completion of 43 houses and 10 flats and construction of site works at Scrabo Road, Newtownards. (b) Town Clerk, Town Hall. (c) £3. (e) August 7.

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NORTH RIDING C.C. (a) Erection of taxation offices at Northallerton. (b) County Architect, County Hall, Northallerton, Yorkshire. (c) 2gns. (d) July 14.

NORTH RIDING EDUCATION COMMITTEE. (a) Erection of Richmond Modern School. (b) F. Barraclough, County Hall, Northallerton, or Denis Clarke Hall, 6, Masons Yard, Duke Street, St. James's, S.W.1. (e) August 3.

PETERSFIELD R.C. (a) Erection of 2 pairs of houses at Merchistoun Estate, Horndean. (b) Council's Engineer, The Old College. (c) 2gns. (e) July 23.

SCOTLAND — EDINBURGH CORPORATION. (a) Demolition and building work at the City Engineer's Roads Depot, Stanwell Street, Edinburgh. (b) City Engineer, 329, High Street. (e) August 6.

SCOTLAND — HAMILTON BURGH COUNCIL. (a) Erection of 287 houses at Udston-Hillhouse 6th Development. (b) Burgh Architect, Municipal Buildings, Hamilton, Lanark. (e) August 27.

SCOTLAND — MIDLOTHIAN C.C. (a) Erection of 10 houses at Temple. (b) County Architect, 32, Palmerston Place, Edinburgh, 12.

SOUTHBOROUGH U.C. (a) Erection of 18 houses at Powder Mill Lane. (b) Messrs. Howes and Jackman, 1, Verulam Buildings, Gray's Inn, W.C.1. (c) 2gns. (e) July 30.

SPILSBY R.C. (a) Erection of 7 houses at Horbling Lane, Stickney. (b) Council's Engineer, Council Offices, Toynton Hall. (c) 3gns. by cheque payable to Council. (e) July 21.

SUNDERLAND B.C. (a) Carrying out alterations and extensions to "The Oaks," South Hylton—Hostel for Aged Persons. (b) Borough Architect, Grange House, Stockton Road. (c) 2gns. (e) July 27.

TAUNTON B.C. (a) Erection of 12 flats, together with outbuildings, drainage and ancillary site works at King Street. (b) Borough Architect, Flook House, Station Road. (c) 2gns. (d) July 14.

TRURO RURAL COUNCIL. (a) Erection of 5 houses at Tregoney. (b) J. H. Snellgrove, 47 Coinagehall Street, Helston. (c) 2gns. (e) July 24.

TYNEMOUTH B.C. (a) Erection of 29 dwellings at Waterville Road, North Shields. (b) Borough Surveyor, 16 Northumberland Square, North Shields. (c) 2gns. (e) July 25.

WARWICK R.C. (a) Erection of a council chamber with administrative offices under adjoining the new Council Offices, 1, Warwick New Road, Leamington Spa. (b) Council's Clerk, 23 Waterloo Place, Leamington Spa. (c) 2gns. (d) July 21.

WELTON R.C. (a) (1) Erection of 14 houses, 8 flats, 8 maisonnettes and site works, and (2) construction of roads, sewers, water main, etc., at Dunholme, Lincs. (b) Messrs. Wm. Saunders and Partners, 24 Castle Gate, Newark on Trent, Notts, or 14, Mercer Row, Lough, Lincs. (c) 3gns. (e) July 21.

WEYMOUTH AND MELCOMBE REGIS B.C. (a) Erection of 110 houses at Littlemoor. (b) Town Clerk, Council Offices, Weymouth. (d) July 20.

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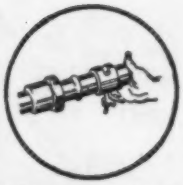
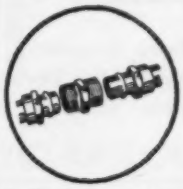
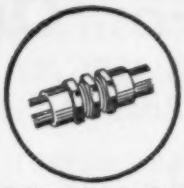


● Swage or circular ridge made with fool-proof tool.



● The fitting seats itself against the swages producing 100% efficient joint.



● Nuts tightened and joint completed in a few seconds.

LOOK at the cross section—metal to metal joints with no loose rings, cones or ferrules, self-seating by means of swage or circular ridge—DOUBLE GRIP CANNOT SLIP !

★ Be safe, use Kingley :—
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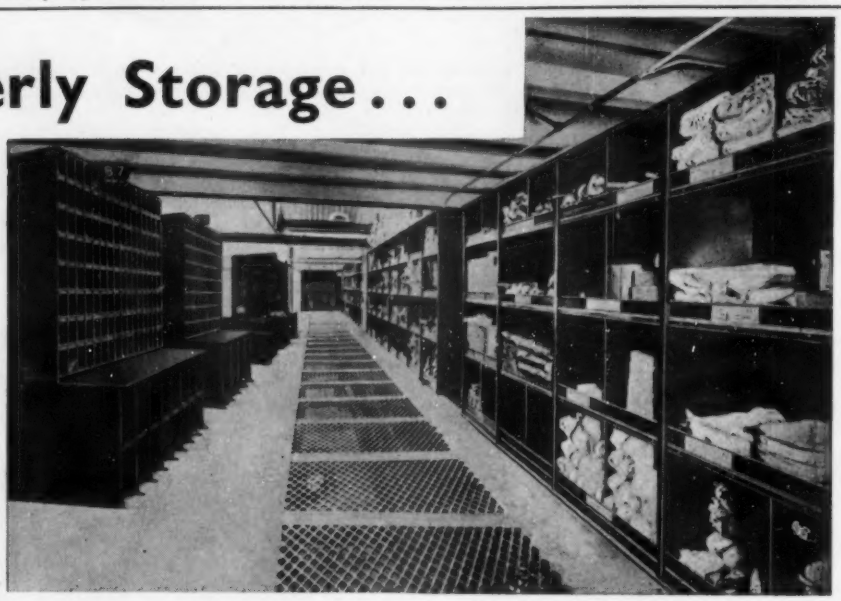

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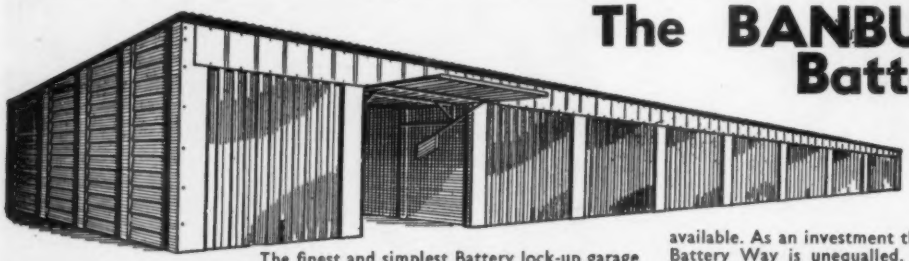

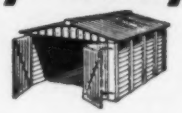

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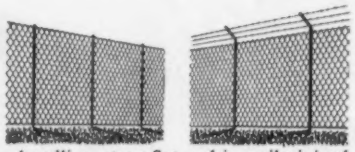

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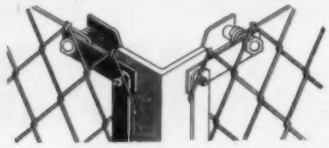

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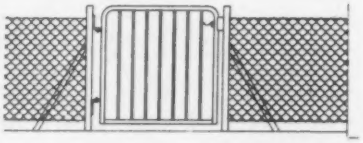

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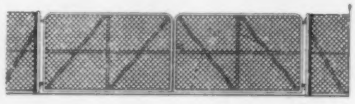

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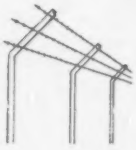

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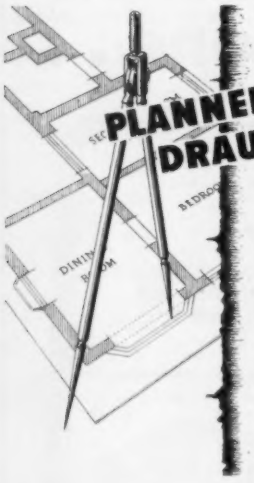

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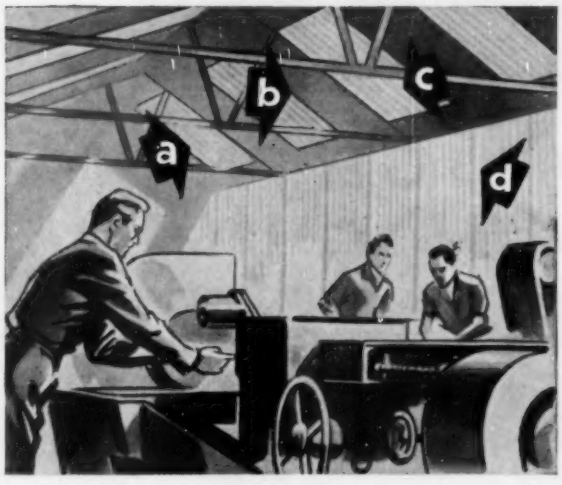

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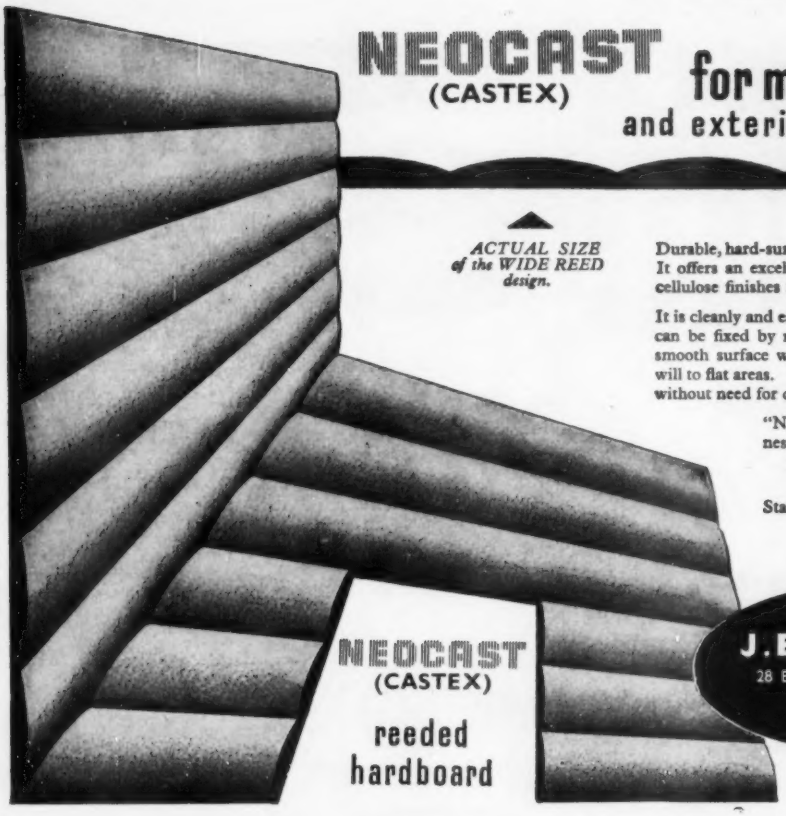

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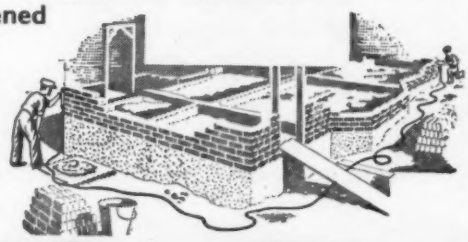

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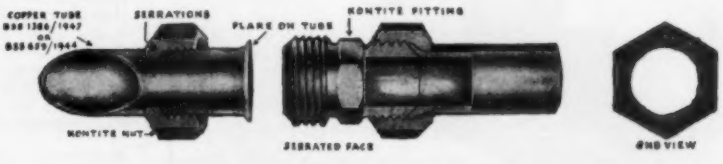

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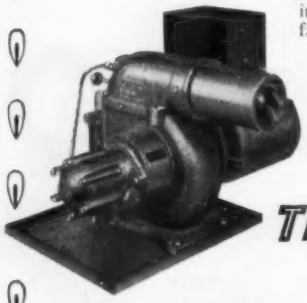

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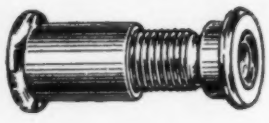

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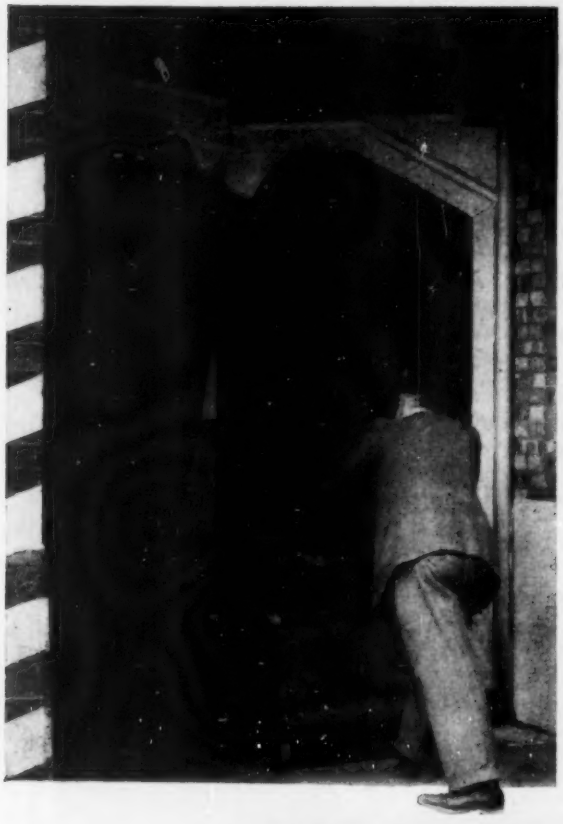

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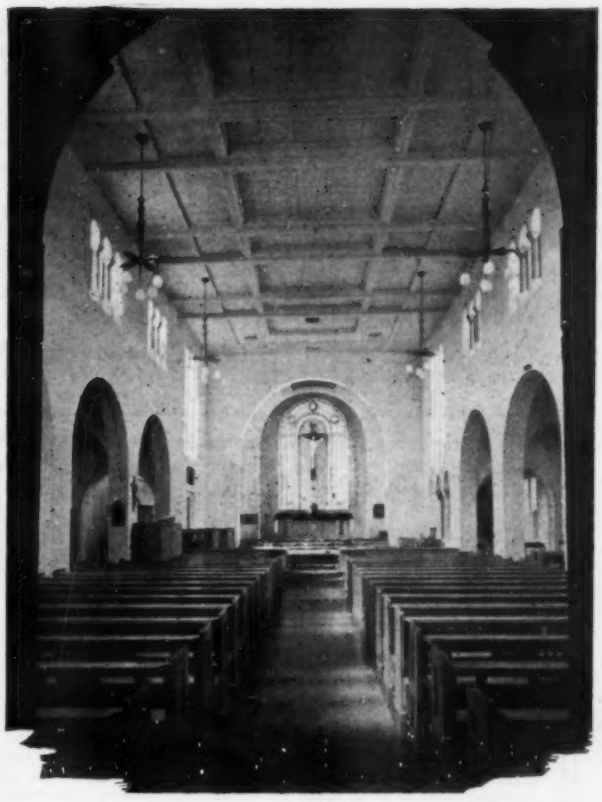

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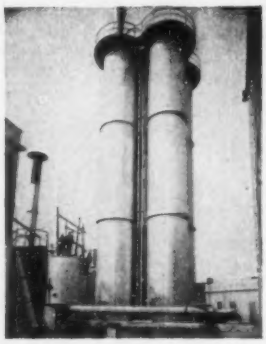

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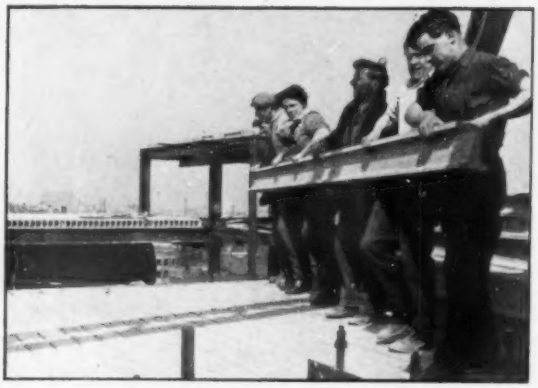

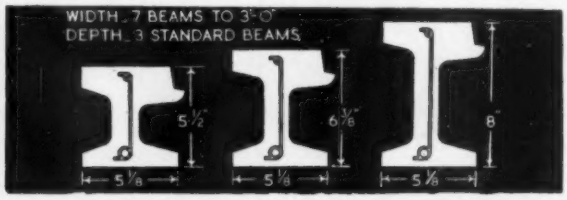

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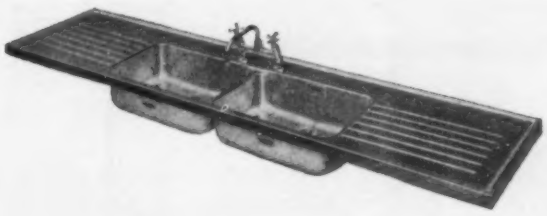

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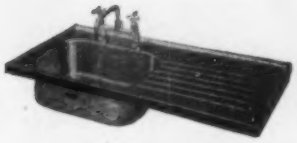

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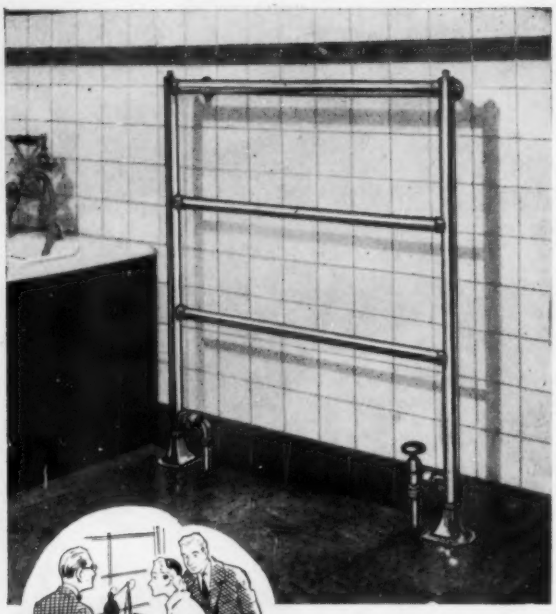

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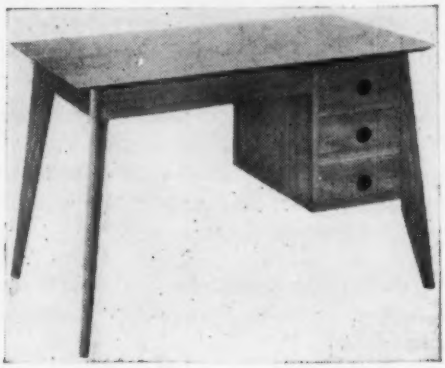

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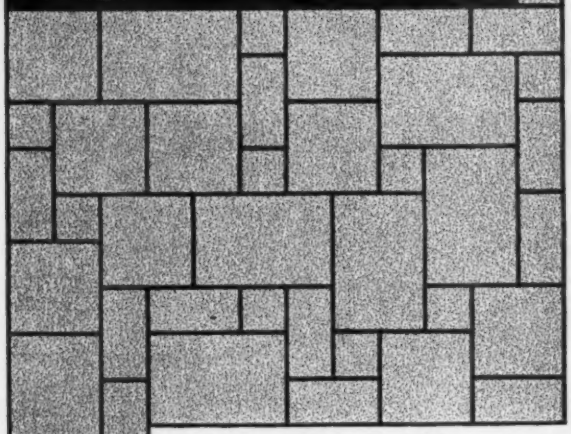

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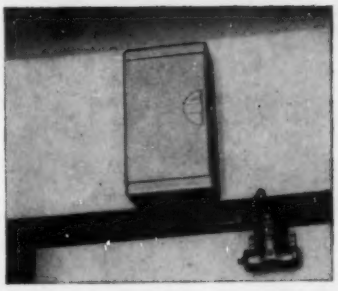

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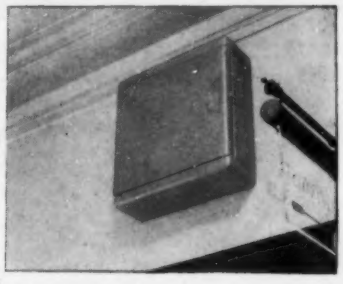

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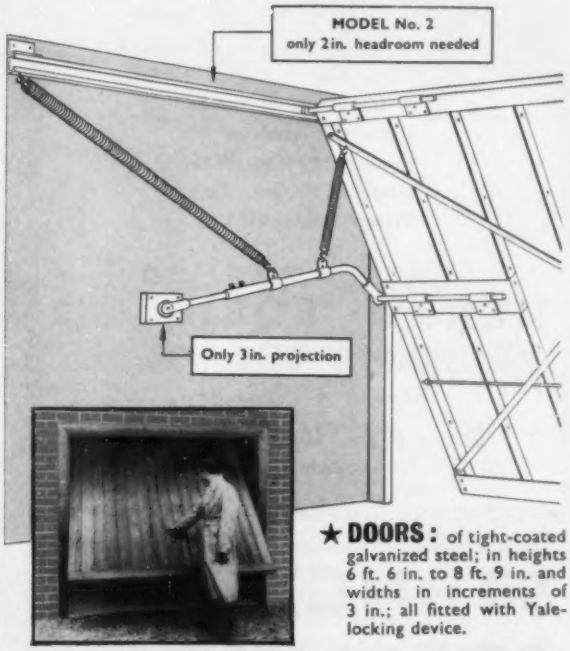

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APPOINTMENTS

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BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT

APPLICATIONS are invited from suitably qualified and experienced Architects and Planners for the following permanent appointments:

ARCHITECTS.
Senior Group Architect, Grade VII, £975 x £45 — £1,200.
Group Architect, Grade VI, £880 x £40—£1,080.
Deputy Group Architects (4 posts), Grade V, £795 x £35—£970.
Assistant Architect, Grade IV, £710 x £35—£885.
Architectural Assistants (2 posts), Grade I/II £530 x £20—£675.

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Senior Assistant Planning Officer, Grade VI, £880 x £40—£1,080.
Assistant Planning Officer, Grade V, £795 x £35—£970.
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London Allowance in addition.

The County Borough has an extensive reconstruction and slum clearance programme, and offers varied and interesting work.

Application forms and details from the Borough Architect and Planning Officer, Thomas E. North, O.B.E., F.R.I.B.A., Dist.T.P., M.T.P.I., 70, West Ham Lane, Stratford, E.15 (returnable by 23rd JULY, 1956). [2512

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(i) ARCHITECTURAL ASSISTANT A.P.T. IV (£710 x £35—£885).
(ii) QUANTITY SURVEYING ASSISTANT A.P.T. IV (£710 x £35—£885).

Applicants for (i) should be associate members of the R.I.B.A. and have had at least three years' varied experience.

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Appointments subject to N.J.C. Conditions, superannuation and medical examination.

Housing accommodation provided if necessary.

Applications stating age, qualifications and experience together with names of two referees to arrive not later than 21st July, 1956.

A. W. WILLIAMS,
General Manager.

Newton Aycliffe,
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Co. Durham. [2520

URBAN DISTRICT COUNCIL OF CORBY

JUNIOR ARCHITECTURAL ASSISTANT
GRADE A.P.T. I (£530 - £610)

APPLICATIONS are invited for the above appointment in the Architectural Section of the Engineer and Surveyor's Department.

Applicants must have passed the R.I.B.A. Intermediate Examination, or its equivalent at one of the recognised schools of architecture, and preference will be given to those who have had practical office experience in housing and general architecture.

The provisions of the Local Government Superannuation Acts 1937/53, will apply to this appointment.

Housing accommodation will be made available to the successful candidate if married.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than the first post on Saturday, 14th July, 1956. Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
CORBY, Northants.
26th June, 1956. [2507

LONDON COUNTY COUNCIL

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ARCHITECTS and BUILDING SURVEYORS required in connection with a large programme of modernisation of schools and housing with a wide range of improvements and adaptations of all types of building. Salaries up to £817 for Assistants and up to £987 for Grade IIIs, with commencing rate according to qualifications and experience.

Further particulars and application form, returnable by 2nd August, 1956, from The Architect (AR/EK/MOD/4), County Hall, S.E.1. (1358) [2547

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Applications (no forms) giving details of age, training, qaulifications and experience and the names of three referees should be sent to the Registrar, College of Art, Leicester, within 14 days of the appearance of this advertisement.

ELFED THOMAS,
Director of Education.
[2530

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VACANCIES exist for Architect/Planners (salaries up to £817). Tasks include three-dimensional planning within London's eight major Comprehensive Development Areas (including Stepney/Poplar, the South Bank, and Elephant and Castle) and other Redevelopment Areas.

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Particulars and application form, from Architect (AR/EK/ATP/2), County Hall, S.E.1. (907). [0006

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THE Council of the A.A. invites applications for the post of Director of the Department of Tropical Architecture. The appointment becomes vacant in September 1957. Candidates appointed will be asked to assist on a part-time basis under the present Director for the coming session from September 24th 1956, to March 22nd, 1957. Salary as Director £1,100; as assistant for 1956/57 session by arrangement.—Full particulars may be obtained from the Secretary, A.A., 36 Bedford Square, W.C.1. to whom applications should be sent not later than August 27th. [2538

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APPLICATIONS are invited for the following appointments in the office of the Divisional Chief Architect situated at Conisborough, near Doncaster:—

QUANTITY SURVEYOR GRADE II.
(Salary Scale: £700 x £30—£1,000 per annum).
Qualifications: A.R.I.C.S.

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Qualifications: Preferably Intermediate R.I.B.A. or studying for such Examination.

JUNIOR ARCHITECTURAL ASSISTANTS.
(Salary Scale: according to age. £4 5s. 0d. per week at 18, to £8 15s. 0d. per week at 25).

Full details and application forms obtainable from Hugh Smith, F.R.I.B.A., Deputy Chief Architect, National Coal Board, P.O. Box No. 4, Denaby, Near Doncaster. [2540

COUNTY BOROUGH OF EAST HAM

BOROUGH ENGINEER'S DEPARTMENT

JUNIOR ARCHITECTURAL ASSISTANTS
Grade I — £530 - £610

LONDON Weighting is paid in addition. Salary in excess of the minimum may be paid according to qualifications and experience.

Subsistence allowances may be granted over a reasonable period to the persons appointed if unable to obtain suitable housing accommodation necessitating the maintenance of two homes.

Further details and application forms, returnable by 27th July, 1956, from the Town Clerk, Town Hall, East Ham, E.6. [2503

THE BRITISH THOMSON-HOUSTON CO. LTD., require Assistants in their Architects Office at Rugby. R.I.B.A. Final or Intermediate standard required with previous experience on Industrial Projects. Applications, stating age and experience and full particulars to:—

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Works Architect.
The British Thomson-Houston Co. Ltd.
RUGBY. [2529

HATFIELD RURAL DISTRICT COUNCIL

ARCHITECT'S DEPARTMENT

APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the appointment of Junior Architectural Assistant (A.P.T. Grade I. £530 x £20—£610) in the Department of the Architect to the Council.

Application giving age, details of training experience, etc., and copies of two recent testimonials or the names of two referees to be sent to Mr. J. H. Parker, A.R.I.B.A., 82 Great North Road, Hatfield, not later than 27th July, 1956.

E. F. CULL,
Clerk to the Council.
5th July, 1956. [2537

WELSH REGIONAL HOSPITAL BOARD

NEW 512 BED HOSPITAL AT SWANSEA.

APPLICATIONS are invited from REGISTERED ARCHITECTS for the following pensionable posts on the TEMPORARY staff of the Regional Architect at 5/7 Museum Place, Cardiff, in connection with the preparation of drawings and specifications for the above new hospital.

1 SENIOR ASSISTANT ARCHITECT.
Salary: £920 x £30 (5) x £25 (1)—£1,095.

1 ASSISTANT ARCHITECT.
Salary within the Grade: £640 x £25 (4) x £35 (2)—£930, according to experience.

Experience in hospital design, though desirable, is not essential, but applicants should be widely experienced in general architectural practice.

Applications, stating age, qualifications, experience, present position, and salary, together with the names of two referees, should be addressed to the Secretary of the Board, Temple of Peace and Health, Cathays Park, Cardiff (from whom further information may be obtained), by Monday, 30th July, 1956. [2542

BOROUGH OF ENFIELD

BOROUGH ENGINEER'S DEPARTMENT

APPLICATIONS are invited for the appointment of a Technical Assistant for the Architects' Section, to assist with work of maintenance and repair of school and other buildings, capable of preparing drawings, specifications and estimates for small alteration works.

The salary will be in accordance with the National Scale, A.P.T. II, commencing at £595 per annum rising to £675 per annum. In addition the London Weighting figure is payable.

The appointment will be superannuable, subject to medical examination, and terminable by one month's notice on either side.

Applications for forms should be made to the Borough Engineer, 7, Little Park Gardens, Enfield, to whom they should be returned by July 31st, 1956.

CYRIL E. C. R. PLATTEN,
Town Clerk.

Public Offices,
Enfield.
July, 1956. [2545

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

STAFF are required for varied and interesting work in the VOLUNTARY SCHOOLS SECTION. Salary range between £620 and £817 according to experience. Intermediate standard desirable.

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(2) ARCHITECTURAL ASSISTANT—for preparation of schemes for development of new and existing school sites and scrutiny of plans and designs for new primary and secondary schools. Applicants should be interested in contemporary school design.

Application forms, returnable by 2nd August, 1956, from The Architect (AR/EK/VS/3), County Hall, S.E.1. (1359). [2546

COUNTY BOROUGH OF EAST HAM

BOROUGH ENGINEER'S DEPARTMENT

ARCHITECTURAL ASSISTANTS—
Grade II £595-£675.

LONDON Weighting is paid in addition. Salary in excess of the minimum may be paid according to qualifications and experience.

Subsistence allowance may be granted over a reasonable period to the persons appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by 27th July, 1956, from the Town Clerk, Town Hall, East Ham, E.6. [2544

APPOINTMENTS—contd.

CITY OF BELFAST

APPOINTMENT OF DEPUTY EDUCATION ARCHITECT AND HEATING ENGINEER

APPLICATIONS are invited for the following positions on the staff of the Education Architect (Donald A. Shanks, Dipl.Arch., A.R.I.B.A.):—

DEPUTY EDUCATION ARCHITECT

Qualifications: Registered Architect and corporate membership by examination of the R.I.B.A. Ability and interest in contemporary architectural design and construction. A sound knowledge of modern educational buildings. Administrative and Local Government experience desirable but not essential.

Salary scale (which may be revised shortly): £1,105 x £50—£1,355.

HEATING ENGINEER

Qualifications: Corporate membership of the Institution of Heating and Ventilating Engineers. Wide experience in the design and supervision of all types of heating, plumbing and ventilation services, including large scale cooking installations. Duties: Supervision of the engineering section engaged on the design of new work and the maintenance of existing plant.

Salary scale: £855 x £35—£1,100.

The commencing salary for both positions will be fixed according to the qualifications, ability and experience of the successful applicants. Superannuation contributions of approximately 6% of remuneration will be payable. Reciprocal pension arrangements exist between the Corporation and other Public Authorities. Favourable consideration will be given in suitable cases to the recoupment, up to a limit of 50% of removal expenses of newly appointed officers coming to reside in Belfast.

Canvassing will disqualify.

Application forms and further particulars are obtainable from the Education Office, Academy Street, Belfast. Completed applications must reach the undersigned by 2nd August.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast,
P.O. Box 234.
6th July, 1956. [2549

COUNTY BOROUGH OF ROCHDALE

BOROUGH SURVEYOR'S DEPARTMENT

CHIEF HOUSING ARCHITECT

APPLICATIONS are invited for the appointment of Chief Housing Architect at a salary of £880 to £1,080 (Grade A.P.T. VI).

Preference will be given to applicants who are Associates of the Royal Institute of British Architects.

The appointment will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, and to passing a medical examination.

Consideration will be given to the provision of housing accommodation.

Canvassing is prohibited and applicants must disclose whether they are related to any member or senior official of the Council.

Applications, stating age, qualifications, training and experience, together with the names and addresses of two persons to whom reference can be made, and endorsed "Chief Housing Architect," must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 30th July, 1956. [2550

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE

APPOINTMENT OF COUNTY ARCHITECT

APPLICATIONS are invited from Fellows or Associate Members of the Royal Institute of British Architects for the post of COUNTY ARCHITECT at a salary of £3,285 rising by 3 annual increments of £105 and one of £55 until a maximum of £3,655 per annum is reached. The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and the successful applicant will be required to pass a medical examination.

The person appointed will be required to carry out all architectural duties (including the design and construction of buildings) that may be assigned to him from time to time by the County Council and the Standing Joint Committee.

Forms of application, together with particulars of the terms and conditions of the appointment, may be obtained from the undersigned, to whom applications should be submitted, together with copies of three recent testimonials, not later than 31st August 1956.

BERNARD KENYON,
Clerk of the County Council.

County Hall,
Wakefield.
July, 1956. [2548

COUNTY BOROUGH OF EAST HAM

JUNIOR ASSISTANT PLANNING OFFICER

GRADE I. £530-£610. Borough Engineer's Department. Plus London Weighting. Salary above minimum and subsistence may be paid subject to conditions. Details and form from Town Clerk, E.6. Closing date, 20th July, 1956. [2502

CITY OF LEEDS EDUCATION COMMITTEE

LEEDS COLLEGE OF ART
Principal: E. E. Pullee, A.R.C.A., F.S.A.E.

APPLICATIONS are invited for the post of HEAD OF THE SCHOOL OF DESIGN to commence duties as soon as possible.

The position is to be filled by an Architect qualified to teach interior decoration and industrial design.

Professional experience is essential and a knowledge of furniture design and/or metal products an added advantage.

A broad understanding of art is a necessity so that full co-operation may be maintained between the Schools of Architecture, Design, Painting, Sculpture and Teacher Training.

Salary: Burnham Technical Scale for Grade III Head of Department, at present £1,215 x £25—£1,365 a year for a man and £972 x £20—£1,092 for a woman.

Application forms (to be returned within 14 days of the appearance of this advertisement) and further particulars may be obtained from the undersigned.

GEORGE TAYLOR,
Chief Education Officer.

Education Department,
Leeds, 1. [2552

ARCHITECTURAL APPOINTMENTS VACANT

OLD established City Architects with a busy and varied practice covering Schools, Hospitals, Research Laboratories and Licensed Premises, etc., require Assistant Architect. Applicants must be in the age bracket 35-40 and fully qualified A.R.I.B.A. with at least 10 years' office experience. Salary £1,000 per annum plus overtime at 25% over basic rates. Five-day week. Luncheon vouchers.

Also two junior assistants age bracket 20-25 of Intermediate Standard. Salary £500-£600 with overtime, hours and vouchers as above.

Write giving full particulars of age, training and experience to Box No. 2996, c/o A. & B.N. [2543

THE METROPOLITAN BOROUGH OF HAMPSTEAD require Junior Architectural Assistant. Salary, Higher General Division (at age 18 - £300 rising to a maximum of £640, plus London Weighting). Medical examination. No housing provided.—Applications, giving three referees, to the Town Clerk, Town Hall, Haverstock Hill, N.W.3. Closing date, 3rd August, 1956. [2525

ASSISTANT (R.I.B.A. intermediate standard) required for estate department of a Yorkshire brewery company. — Write, giving age, experience and salary required, to Box 2971, c/o A. & B. N. [2531

ARCHITECTURAL ASSISTANTS required immediately by a large Industrial Concern in the Midlands. R.I.B.A. Intermediate and/or Final Standard required. Salary £700 - £1,000 p.a. according to age and experience. — Apply, with all particulars, Box 2946, c/o A. & B. N. [2528

THE CORPORATION of the Cranleigh and and Bramley Schools wish to appoint an Architect and Surveyor or a Surveyor for S. Catherine's School, Bramley, from the 1st September, 1956. Applications are invited from Architects and Surveyors or Surveyors practising within 25 miles of Guildford. The Council propose to offer a retaining fee in addition to scale fees as laid down by the R.I.B.A. and/or R.I.C.S. — Particulars may be obtained from the Headmistress. [2527

ARCHITECT'S assistant required for office in North London. — Box 2805, c/o A. & B. N. [2501

ASSISTANT required for small office. Final or Intermediate standard with good office experience. Salary £600—£760 p.a. according to experience. — Write or phone: Alan S. Raimes, A.R.I.B.A., 6, Holborn Viaduct, E.C.1. City 4201. [2504

ARCHITECT'S Co-partnership require Assistant for working drawings and detailed design. Salary according to experience. Office doing work in U.K. and West Africa. Holiday can be taken this year. — Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [0002

ARCHITECT'S Assistant required for the London office of a firm of Architects with interests throughout the country, must be of Intermediate R.I.B.A. or R.I.C.S. standard. Superannuation scheme. — Apply in writing to: Messrs. Cotton, Ballard & Blow, 5, Baker Street, London, W.1. [0009

ARCHITECTURAL Assistant required up to intermediate standard. Westminster office. Pension and bonus schemes. 5-day week. — Write, stating experience, age and salary required, to Box 2376, c/o A. & B. N. [0083

ASSISTANT required in busy practice in West End, in early twenties, about intermediate R.I.B.A. Standard. Excellent opportunities for gaining all-round experience. — Box 1685, c/o A. & B. N. [0636

INTERMEDIATE and Junior Assistants required in progressive London office.—Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, W.C.1. HOLborn 7082. [0004

SENIOR Assistant required in West End Office, very busy on interesting commercial work. Must be prepared to take responsibility. — Please write, giving details of experience, etc., Box 2729, c/o A. & B. N. [0637

ARCHITECTS. Jackson and Edmonds have vacancies for assistants in salary grades between £250 and £500 per annum. — Write, stating age and experience, to 116, Colmore Row, Birmingham, 3. [2522

SITUATIONS VACANT

AN excellent opportunity occurs for a Draughtsman with Higher National Certificate in Mechanical Engineering to undertake Plant Layout and Development. — Applications, giving full details of age, experience and qualifications and salary expected, should be addressed to Personnel Manager, Tubes Limited, Desford Lane, Kirby Muxloe, Nr. Leicester. [2534

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INDEX TO ADVERTISERS

Official Notices, Tenders, Auctions, Local and Miscellaneous Appointments on pages 100 and 101.

Abix (Metal Industries) Ltd. .. —
Acrow (Engineers) Ltd. 97
Aerialite Ltd. ..... —
Adam & Lane & Neeve Ltd. .. —
Adams Hydraulics Ltd. ..... —
Adams, Robert (Victor), Ltd. .. 98
Ajax Architectural Products Ltd. —
Aldam, Hill, E. & Co. Ltd. .. —
Ancorite Ltd. ..... —
Anderson, C. F., & Son Ltd. — —
Armstrong Cork Co. Ltd. .... —
Associated Metal Works (Glasgow) Ltd. 80
Atlas Preservative Co. Ltd. .. —
Atlas Stone Co. Ltd. ..... —
Austin & Trimingham 86
Auto Door Closer Co. ..... —
Avery, J., & Co. Ltd. 84

Baldwin, Son & Co. Ltd. .... —
Barking Brassware Co. Ltd. .. —
Barry, Ostlere & Shepherd Ltd. —
Bath & Portland Stone Firms —
Batley, E., Ltd. 88
Baume & Co. ..... —
Bawn, W. B., & Co. Ltd. .... —
Bawn's Pressings Ltd. ..... —
Baxendale & Co. Ltd. ..... —
Bell & Webster Ltd. ..... —
Berger, Lewis (Great Britain) Ltd. ..... —
Berry Wiggins Ltd. ..... —
Beynon, T., & Co. Ltd. ..... —
Black Sheathing Felt Campaign —
Blackwells & National Roofings Ltd. ..... —
Blackwell, Wyckham Ltd. 79
Blakey Cabinet & Metal Works Ltd., The ..... —
Bolton Gates Co. Ltd. 22
Boot, H., & Sons Ltd. 63
Bostwick Gate & Shutter Co. Ltd. ..... —
Bourner, F. H., & Co. (Engineers) Ltd. ..... —
Bow Slate & Enamel Co. Ltd. — —
Bowater Sales Co. Ltd. ..... —
Braby, F., & Co. Ltd. 4
Brady, G., & Co. Ltd. ..... I.F.C.
Braim-arc Ltd. ..... —
Bratt Colbran Ltd. ..... —
Briggs, Wm., & Sons Ltd. 34
British Aluminium Co. Ltd. .. —
British Bitumen Emulsions Ltd. —
British Constructional Steelwork Association 73
British Ebonite Co. Ltd. .... —
British Electrical Development Association ..... —
British Hermeseal Ltd. 59
British Mouldex Ltd. ..... —
British Paints Co. ..... —
British Plaster Boards (Manufacturing) Ltd. ..... —
British Plimber Ltd. ..... —
British Reinforced Concrete O.B.C.
British Replin Ltd. 81
British Steel Constructions Group of Companies ..... —
British Titan Products Co. Ltd. 70
Brockhouse, J., & Co. Ltd. .... —
Bryce White & Co. Ltd. .... —
Burn Bros. (London) ..... —
Business Dictionaries Ltd. 98

Cafferata & Co. Ltd. 33
Callow Rock Lime Co. Ltd., The ..... —
Carborundum Ltd. 74
Carter & Co. Ltd. 9
Canada, Government of ..... —
C. & P. Development Ltd. 92
Cape Asbestos Co. Ltd., The .. —
Cash, H. & J., Co. Ltd. .... —
Cellon Ltd. 80
Celotex Ltd. 25
Cement Marketing Co. Ltd. .. —
Central Electricity Authority .. —
Chamberlin Weatherstrips Ltd. 84
Cheetham, A. J., Ltd. ..... —
Chesterman, J., & Co. Ltd. .. 95
Chilton Steel Ltd. ..... —
Churchouse, C.M., Ltd. ..... —
Clarke Ellard Eng. Co. Ltd. .. 19
Clang Ltd. ..... —
Claughton Bros. Ltd. 96
Clement Bros. Haslemere Ltd. 64
Clyde Structural Iron Co. Ltd —
Colhurst Symons & Co. Ltd. — —
Compactom Ltd. 56
Conder Engineering Co. Ltd. 89
Conex-Terna Ltd. 67
Coseley Engineering Co. Ltd. 24
Costain, Richard, Ltd. ..... I.B.C.
Cox & Co. (Watford) Ltd. .... —
Cox, William J., Ltd. ..... —
Cozens Ventilators Ltd. ..... —

Crittall Manfacturing Co. Ltd. —
Cullum, H. W., & Co. Ltd. .. —
Curfew Doors & Shutters Ltd. —
Curwen & Newbury Ltd. .... —
Cutting, R. C. 79

Dale, John, Ltd. ..... —
Dalton, Ballard & Co. Ltd. .. —
De la Rue, Thos., & Co. Ltd. 39
Dennison, Kett & Co. Ltd. .. 42
Dexion Ltd. ..... —
Docker Bros. ..... —
Dowson & Mason Ltd. ..... —
Dunlop & Ranken Ltd. 79
Dusek Bros., & Co. Ltd. .... —

Economic House Drainage Rpk. Co. Ltd., The 79
Edison Swan Electric Co. Ltd., The ..... —
Eidelman, J. 86
Electrolux Ltd. ..... —
Elliott, Samuel, & Sons (Reading) Ltd. ..... —
Engert & Rolfe Ltd. 79
En Tout Cas Co. Ltd. ..... —
Esavian Doors ..... —
Expanded Metal Co. Ltd. 32
Expandite Ltd. 85

Faculty of Architects and Surveyors, The ..... —
Falkirk Iron Co. Ltd., The .. —
Farmer, S. W., & Co. Ltd. .... —
Ferodo Ltd. 54
Fibreglass Ltd. 76
Finch, B., & Co. Ltd. ..... —
Finlock Gutters Ltd. ..... —
Flavel, S., & Co. Ltd. 29
Flexaire Ltd. ..... —
Flexo Plywood Industries Ltd. —
Franki Compressed Pile Co. Ltd., The 47
Freeman, Joseph, Sons & Co. Ltd. ..... 1 & 80 & 83
French, Thos., & Sons Ltd. .. —
Furniss & Co. 95
Furse, W. J., & Co. Ltd. 86

Gardner, J., & Co. Ltd. ..... —
Gas Council ..... —
Gaskell & Chambers Ltd. ..... —
General Electric Co. Ltd., The 27
Gimson & Co. (Leicester) Ltd. —
Glass Fibre Products (London) Ltd. 85
Glazed & Floor Tile Manufacturers' Association ..... —
Gliksten, J., & Co. Ltd. 38
Grange-Camelon Iron Co. .... —
Gray, J. W., & Co. Ltd. 79
Green & Vardy Ltd. ..... —
Greenwood's & Airvac Ventilating Co. Ltd. 53
Grundy, J., Ltd. 91
Gulf Radiators Ltd. ..... —
Gummers Ltd. 52
Hale & Hale Ltd. ..... —
Hall, Harding Ltd. 89
Hall, J. & E., Ltd. ..... —
Hammer, Geo. M., & Co. Ltd. —
Hammond & Champness Ltd. .. —
Hangers Paints Ltd. ..... —
Hardwood Floorings Manufacturers' Association 40
Harvey, G. A., & Co. Ltd. .. 82
Haskins 30
Hathernware Ltd. 80
Haynor Ltd. 90
Henderson, P. C., Ltd. ..... —
Henley's W. T., Telegraph Works, Co. Ltd. ..... —
Hewitt, F. & D. M., Ltd. 90
Heywood, W. H., & Co. Ltd. — —
Higgs & Hill Ltd. 35
Hilger & Watts Ltd. ..... —
Hill, Aldam, E., & Co. Ltd. .. —
Hill, R., Ltd. 41
Hills, F., & Son Ltd. ..... —
Holland, Hannen & Cubitts Ltd. —
Holophane Ltd. ..... —
Holoplast Ltd. 2
Home Fittings (G.B.) Ltd. .... —
Hope, Henry, & Sons Ltd. 69
Hotchkiss Engineers Ltd. 68
Hunter, Douglas Holland (Luxaflex) ..... —

Ibstock Brick & Tile Co. Ltd. — —
Iliffe & Sons Ltd. ..... —
Imperial Chemicals Industries Ltd. 57
Ironite Ltd. ..... —

Jablo Plastic Industries Ltd. .. —
Janes, H. C., Ltd. ..... —
Johnson Bros., Ltd. ..... —

Johnson's Reinforced concrete Engineering Company Ltd. .. 10
Jones, T. C., & Co. Ltd. .... —
Jones & Broadbent Ltd. ..... —

Kango Electric Hammers Ltd. 8
Kay & Co. (Engineers) Ltd. 87
Kay, Frdk. (Engineering) Ltd. —
Kerner-Greenwood & Co. Ltd. —
King, J. A., & Co. Ltd. .... —
Kings Langley Eng. Co. Ltd. 81
Klinger, Richard, Ltd. ..... —
Korkoid Decorative Floors 93

Lacrinoid Products Ltd. ..... —
Laing, John & Sons Ltd. .... —
Lambhill Ironworks Ltd. .... —
Later, A., & Co. Ltd. ..... —
Libraco Ltd. ..... —
Light Steelwork (1925) Ltd. .. —
Lindsay's Paddington Iron Works (1948) Ltd. ..... —
Lion Foundry Co. Ltd. ..... —
Liquatile Supply Co. 82
Logical Fuel Storage Units 58
London Electric Firm Ltd. .... —
London Brick Co. Ltd. ..... —
London Life Association Ltd. .. —
Lumenated Ceilings Ltd. 72
Luxfer Ltd. ..... —

MacAndrews & Forbes Ltd. .. —
Magnet Timber Ltd. ..... —
Mancuna Engineering Ltd. 91
Manger, J., & Son Ltd. 48
Maple & Co. Ltd. ..... —
Margolis, M. 79
Margolis, S. 94
Marley Tile Co. Ltd., The 75
Marryat & Scott Ltd. 83
Masonite Ltd. ..... —
Mather & Platt Ltd. 16
McCarthy, M., & Sons Ltd. .. —
Mealing Bros. Ltd. ..... —
Medway Building & Supplies Ltd. 36
Merchant Adventurers Ltd. .. —
Mint (Birmingham) Ltd., The 64
Minton Hollins Ltd. ..... —
Moler Products Ltd. ..... —
Morris Singer Co. ..... —
Mullen & Lumsden Ltd. 79
Murex Welding Process Ltd. .. —
Myton Ltd. 28

Nairn, Michael, & Co. Ltd. .. 46
National Association of Master Asphalters ..... —
National Coal Board ..... —
New Day Electrical Accessories Ltd. 46
Newman, Wm., & Sons Ltd. .. —
Newsum, H., & Sons & Co. Ltd. ..... —
Noelite Ltd. 96
Northarc Organisation, The .. 98
Norwich Union Ltd. ..... —
Norwood Steel Equipment (London) Ltd. ..... —
Nu-Swift Ltd. ..... —
Nu-Way Heating Plants Ltd. 60

Odoni, A. A., & Co. Ltd. .... —

Paramount Asphalt & Flooring Co. ..... —
Parker, Winder & Achurch Ltd. 96
Parmiter, Hope & Sugden Ltd 97
Parsons, Thos., & Sons Ltd. .. 90
Partridge Wilson & Co. Ltd. .. 66
Penfold Fencing Eng. Ltd. 84
Permafence Ltd. ..... —
Permanite Ltd. 23
Petradene Ltd. ..... —
Philips Electrical Ltd. ..... —
Pickerings Ltd. 49
Phoenix Rubber Co. Ltd. 11
Pierhead Ltd. 18
Pilkington Bros. Ltd. 3
Pilkington Tiles Ltd. 12
Plyglass Ltd. 6
Pollard, E., & Co. Ltd. ..... —
Portable Concrete Buildings Ltd. 82
Potter, F. W., & Soar Ltd. .. 52
Protim Ltd. ..... —
Pyrotenax Ltd. ..... —

Radiation Ltd. 5
Raines & Porter Ltd. 7
Rainham Timber Eng. Co. Ltd. —
Redpath Brown ..... —
Reliable Plywood Co. Ltd. .. —
Reynolds, H. L., Ltd. 96
R.I.W. Protective Products Co. Ltd. ..... —
Richardson & Starling Ltd. .. —
Ringmer Building Works Ltd. —

Rippers Ltd. 43
Robinson, H. (Ironfounders) Ltd. 98
Rolyat Tank Co. Ltd. ..... —
Rubber Improvements Ltd. .. —
Rustproof Metal Windows Co. Ltd. 13
Ryjack Productions Ltd. 61

Sadd, John, & Sons Ltd. .... —
Salopian Engineers Ltd. 50
Sanders, Wm., & Co. (Wednesbury) Ltd. 65
Sankey, J. H., & Sons Ltd. .. —
Seaboard Lumber Sales Co. Ltd. —
Sealanco (St. Helens) Ltd. 88
Sealdraught Ltd. ..... —
Secomastic Ltd. 80
Semtex Ltd. ..... —
Schairn Products Ltd. ..... —
Schaverien Sheet Metal & Engineering Co. Ltd. ..... —
Shutter Contractors Ltd. 87
Siegwart Floor Co. Ltd. ..... —
Simplex Electric Co. Ltd. 77
Sissons Bros. & Co. Ltd. .... —
Small & Parkes Ltd. ..... —
Smith, Samuel, & Sons Ltd. .. 94
Smith, Thomas, & Sons Ltd. .. —
Smith's Fireproof Floors Ltd. 56
Solignum Ltd. ..... —
Sommerfields Ltd. 62
Stainless Steel Sink Co. Ltd., The 93
Standard Metal Window Co. —
Standard Patent Glazing Co. Ltd., The 99
Stanley, W. F., & Co. Ltd. .. —
Steebrac Ltd. ..... —
Steel Bracketing & Lathing Ltd. 14
Steel Radiators Ltd. ..... —
Stelcon (Industrial) Floors Ltd. 37
Steralic Filters Ltd. 58
Stillite Products Ltd. ..... —
Stramit Boards Ltd. 55
Stic B Paints Ltd. 50
Storry Smithson & Co. Ltd. .. —
Stuart's Granolithic Co. Ltd. .. —
Sugg, Wm. & Co. Ltd. 31
Sun Insurance Office Ltd. .... —
Sundeala Board Co. Ltd. 45
Surfex Flooring Co. 92
Surrey Concrete Ltd. ..... —
Sussex Cement & Concrete Products ..... —
Szerelmey Ltd. ..... —

Tabula Chalkboards Ltd. .... —
Tarmac Ltd., Vinculum Dept. 92
Taylor Rustless Fitting Co. Ltd. —
Taylor Woodrow Ltd. 71
Teleflex Products Ltd. ..... —
Tees-side Bridge & Engineering Works Ltd. 78
Temperature Ltd. ..... —
Templex Holdings Ltd. 98
Tentest Fibre Board Co. Ltd. .. —
Thames Plywood Manufacturers Ltd. ..... —
"The Times" Veneer Co. Ltd. 99
Thermocontrol Installations Co. Ltd. ..... —
Thermacoust Ltd. 48
Therofire Engineering Co. Ltd. 88
Thompson, John, Beacon Windows Ltd. 26
Thorn Electrical Industries Ltd. —
Thornton, William, & Sons Ltd. 79
Thorp, J. B. 80
Timber Development Association ..... —
Tretol Ltd. ..... —
Trianco Ltd. 21
Trollope & Colls Ltd. ..... —
Troughton & Young (Lighting) Ltd. ..... —
Twyfords Ltd. 51
Tyrol Sales Ltd. ..... —

Unique Balance Co. Ltd. 66
United Merchants Ltd. 60
United Paint Co. Ltd. 62
United Steel Companies Ltd. .. —

Veitchi Company Ltd., The .. —
Velux Co. Ltd. 68
Versatile Fittings Ltd. ..... —
Vulcanite Ltd. ..... —

Water Softener & Vacuum Cleaner Service Ltd. ..... —
Ward, Thos. W., Ltd. 44
Wednesbury Tube Co. Ltd. .. 15
Wheatley & Co. Ltd. 17
Williams & Williams Ltd. 20

Youngman, W. C., Ltd. 94

If no page number is quoted, please see previous issues.

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Architect:
H. Conolly, Esq., F.R.I.B.A., County Architect

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